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A NEAT and appropriate tribute was paid to Mr. PERCY GILCHRIST THOMAS at the recent meeting of the British Iron and Steel Institute at Vienna, by the presentation, on the part of Herr BAEUMLER, of the Prague Iron-Works Company, of a casket made exclusively of steel manufactured by the basic process. From the descriptions of it which have reached us, it seems that the idea of proving the exceptionally fine quality of the Austrian basic steel has been admirably carried out.

THE invention of Mr. JOHN GJERS, of Middlesborough, which we briefly describe in our summary of the proceedings of the Iron and Steel Institute, is of interest, aside from its acknowledged value from an economical point of view, because it completes the series of processes by which iron ore can be converted into steel without the use of fuel beyond that required in the blast-furnace. Metallurgists of the present generation have reason to look with pride upon the record of progress in this branch of their great field. To work metal from its crudest shape to the finished product, without ever letting it get cold enough to interfere with further working, is something that not even the most sanguine friends of BESSEMER would have predicted a few decades ago. The ore can now be charged with the fuel into a blast-furnace ; the molten pig, as it is tapped from the latter, can be run directly into the Bessemer converter ; the ingots cast be put into Mr. GJERS'S new "soaking-pits," and bloomed and rolled into finished rails without the burning of a single pound of fuel to keep the material hot while it is undergoing these processes. Even the steam for the blowing-engines of the furnace, and for a part of the converting and rolling machinery, can be generated by burning a part of the waste gases of the blast-furnace. Contrast this with the rows of stacks of a puddling-mill, belching forth clouds of smoke ; with its melting, puddling, and reheating half a dozen times, and its handling of the intermediate products ! With such achievements in the manufacture, and with an army of earnest and intelligent engineers endeavoring to solve, with the aid of science, the practical difficulties which arise in the adaptation of the product to the uses of the constructor, builder, and machinist, can it be denied that the "age of iron" is fast giving way to the "age of steel"?

THE DUTY ON LEAD.

During the past few weeks, gentlemen connected with different departments of our lead industry have appeared before the Tariff Commission to plead for the retention of the present duty on lead ores, pig-lead, etc., or for such modifications as were likely to advance their interests. The great mass of producers has held aloof, only the Missouri smelters coming forward. In this apathy, the lead producers of our Rocky Mountain States and territories follow the example of those engaged in many important industries. By the confessions of one of its principal members, the Tariff Commission is a failure so far as its work in gathering data to frame recommendations for an intelligent revision of our tariff is concerned. Although the commission has failed to get the bottom facts in regard to any industries, not from any lack of hard work on its own part, its proceedings have revealed to the public the existence of contending interests. To a certain extent, this has been the case so far as those who have appeared in behalf of certain branches of our lead industry are concerned. The interests of the trade will not be promoted by silence, but much good can be done by a discussion that will make those whose interests are threatened understand the danger of this movement and appreciate its force. It is with this object in view that we present the following considerations.

The lead trade of this country has undergone wonderful changes during the past decade. Unfortunately, the Census Bureau has not yet published its figures for this industry, and we can only in a general way say, in regard to the source of the raw material, that, of the estimated production of 135,000 tons this year, about 100,000 tons will be made in the Rocky Mountains, Leadville alone, with contributory smelting camps, coming up to nearly 50,000 tons. Missouri, Illinois, and Kansas are roughly estimated at 35,000 tons, while the production of the Eastern States is insignificant. Formerly, with the exception of California, the local Western manufacture of lead and of white-lead was insignificant, and the great bulk of the metal came to the Eastern cities, the excess over the Eastern demand being returned to the West in the shape of manufactured goods, a tendency developed to tap the growing current of crude lead coming from the Rocky Mountains, at points along the line, and local pipe, sheet, and shot mills and white-lead manufacturers sprang up. These not only soon filled the local demand, displacing Eastern goods, but began to encroach upon the home territory of the Eastern works. Beginning at Salt Lake City and at Pueblo, these works are now found in every principal town on the line, and those at St. Louis, Chicago, and Pittsburg are cutting into the trade in the Middle and Atlantic States, which formerly was controlled by works on the coast. The Western works have multiplied and extended their capacity from year to year, while those in the East have not even held their own ground. Although Eastern manufacturers are careful not to acknowledge this state of affairs publicly, we know that it is giving them much cause for alarm. With freights on raw material and freights on manufactured goods to pay both ways to reach any competitive Western point, their market is steadily contracting, and this loss is perhaps not even compensated by the natural local increase of trade. These facts, we believe, lie at the bottom of the recent movement for a reduction of duty on pig-lead.

It is urged by Eastern manufacturers that the present duty on lead of $2 per 100 pounds is prohibitory, raising the cost of materials to the consumer without adding revenue to the public treasury ; and if the duty on pig-lead were taken off, the price of foreign lead would advance by an amount almost equal to one half of the reduction of duty, while the prices here would fall a similar amount. The repeal of the duty would effect a reduction of the cost to the consumer equal to about one half of the amount of the duty. Mr. BENJAMIN TATHAM, in his argument before the Tariff Commission in this city, says : "In such a case, the price of lead in Europe and in the seaboard of the United States would be very nearly equal. The present price is about five cents per pound here, while in Europe it is about three cents per pound. If admitted free, the price of pig-lead here and there would probably be about four cents per pound. Home manufacturers would then obtain their supplies of pig-lead at about the same price as the foreign manufacturers ; and the competition would lie between the cost of labor and the skill of the manufacturer in the respective countries. There would, in such a case, be no revenue derived from imported lead. From past experience, it is probable that from a duty of three quarters of a cent per pound on foreign lead, with full drawback upon an equal weight exported to foreign countries, our foreign commerce would be increased, and the general welfare of the people of the United States be best secured—at least, until the public debt shall be extinguished."

According to Mr. TATHAM'S own figuring, the reduction of the duty from $40 to $15 a ton would cause a decline in the price here of one half, or $12.50 per ton in the markets of this country, and our mining industries would have to bear a direct loss of $1,500,000 per annum at the present rate of production. It is very often said, in a sweeping way, that "the silver and gold in our own ores will cause them to be mined without reference to the value of the lead." A glance at the balance-

sheets of one of our most favorably situated argentiferous lead-producing mines will show the fallacy of this statement. The Horn-Silver Mining Company, at the time of its last report, had sold lead for an amount aggregating $1,188,430.77, its total receipts from all sources being $3,667,788.31. Its loss of revenue would have amounted to $165,000, reducing the dividends from $500,000 to $335,000. To Leadville miners, the annual loss would be fully $600,000.

These figures are based upon Mr. TATHAM'S assumption that a reduction of the duty here would cause an advance in the cost of lead abroad. This, we believe, would not be borne out by facts, and the loss would really be greater. The lead market in Europe has been low for some time past, and still production in the principal countries has gone on unabated. There is now a great reserve power, particularly in Spain, which would very quickly respond to any marked advance in the price, and keep it down. The importation of 10,000 or 20,000 tons of lead at the Atlantic coast would simply mean so much of an additional market for Spanish mines now idle. If the productive capacity of Europe were limited to approximately its present output, an appreciable increase in the price abroad would follow naturally; but as it is, on the contrary, not only liable to rapid expansion, but, through increased railroad facilities, even likely to grow quite steadily in the long run, it is not safe to assume any such increase in price there.

Mr. TATHAM, and Eastern manufacturers generally, seem anxious to extend their foreign trade, and they ask that our present drawback system be modified so that, instead of being practically useless as it now is, it may become effective. In this, they deserve the hearty support of the mining interests of all the sections of the country, nor will Western manufacturers oppose it, even if an increased rate of manufacture may give them the slight advantages of the greater economy due to working on a larger scale. It is asked, first of all, that the provision by which ten per cent of the duties levied on imported raw material is withheld be withdrawn. It defeats the object of the drawback system, which is to give employment to American industry. Another extremely embarrassing provision is that by which the manufacturers must state, under oath, that the goods exported have been made of the identical raw material imported. It is difficult to imagine a more absurd method of defeating the object of a good measure than that of our present drawback system. As it now figures in our tariff law, it is practically made valueless, and it is only under exceptionally favorable circumstances that our manufacturers can attempt to import raw material and export finished goods.

We can not help once more advocating the adoption by our government of the French drawback system, the value of which is nowhere so well illustrated as in the case of lead. Briefly formulated as we would like to see it extended, it would be as follows: Any person has the right to demand the return of duties paid on a foreign raw material if imported at any port of the United States where he can prove that he has exported a corresponding quantity of the raw material of equal grade, or of goods manufactured from it.

Germany and England send to China every year from 15,000 to 20,000 tons of lead and manufactures of lead. Nevada and, to a small extent, Utah ship from the Pacific to the Atlantic coast annually from 10,000 to 15,000 tons of lead. It was only once when lead had fallen to 2¾ to 3 cents per pound that Nevada lead went to China. If the French drawback system were introduced, the Richmond and Eureka companies could import European lead duty free into ports on the Atlantic coast and ship the lead they produced in Nevada to China. The difference in the cost of European lead delivered here, and the market price, often amounting to more than the duty plus the freight from Eureka to New York, could be used to pay the freight to China and make up for any lower prices which they would have to meet there. It is probable that they would be able even to manufacture lead on the Pacific coast and send it to China in that form. Other producers would not in any way be adversely affected, because the operation of the system so far as our markets are concerned, would simply be the substitution of European for Western lead.

Eastern smelters of lead ores plead for the removal of the duty on lead ore. As our Eastern mines are even now unable to compete with those of the West, being generally low in silver, and as the supplies of lead ores available from foreign sources are limited, there is no good reason why the smelting industry on this coast, and possibly on the Pacific coast, should not be encouraged. Free ores would also tend to aid largely in the development of a large smelting business along the Mexican border, in New Mexico and Arizona.

RECENT PROGRESS IN THE STRONG WATER-GAS PROCESS.

Written for the Engineering and Mining Journal by George S. Dwight.

In my determination to ascertain the real scope of the Strong water-gas system, I have had to meet and overcome many mechanical difficulties. Those accustomed only to our clean American anthracite can scarcely realize how many questions have thus arisen. But experience has taught me how to overcome each and all of these, until I have now a construction adapted to all fuels, good and bad. The principle of Strong's system was, from its inception, singularly perfect; but in view of my present knowledge, I can not but wonder that its efficiency was so far demonstrated in the first American apparatus, from which it is necessary to make so many radical departures to secure the best results. One of the greatest defects was discovered through my effort to utilize the heat of the water-gas, which, passing directly out of the fire-chamber below the grate, carried many heat units into the hydraulic. To save these, an additional regenerative chamber was employed, through which the gas passed, leaving most of its heat to be blown back to the coal with the subsequent air-blast. This served the desired purpose, but developed a fact before unexpected, namely, the passage or "transporation" of highly-heated steam through the partition-walls, though these were 15 inches thick and laid with the utmost nicety. A series of tests with gauges explained this, by proving that, contrary to the prevailing notion, the internal resistances, and in consequence the pressures, very greatly vary at different points of the furnace.

I found also that the efficiency of the furnace was reduced in proportion to the transporation of the steam: that is, its drift out of the regular channels. The action of the superheated steam on the pulverized fuel not taking place to a desired extent (some of the steam having an insufficient contact with carbon), the steam was not fully converted, and a part, indeed, escaping the contact entirely by passage directly across the upper part of the furnace. This part remained entirely undecomposed, and condensed beyond the outlet. To test this important matter absolutely, the brick partitions were rendered impermeable by placing within them iron plates carefully corrugated in small sexagons to compensate expansion. These were riveted steam tight to the frame of the furnace. This almost entirely overcame the difficulty, and I may mention, in passing, that subsequent examination of the cross-plates showed that the superheated steam had acted upon them "*à la Barff*," and coated them thoroughly with bright black oxide, thus proving both that principle and the passage of the steam. The necessity for a complete separation of the different chambers of the furnace being thoroughly established, my latest construction meets this and some other facts developed by my practice, and I will briefly explain. I have found that the base of the combustion or fuel-chamber was a sensitive point, and that the additional regenerator already mentioned, by furnishing hot blast, still further complicated matters there by increasing slag and burning the brick. With anthracite, it was possible to work without grate; but with ashy fuels, bars were desirable; the air-blast and, still more, the rush of intensely hot gases, however, gave much trouble there. I obviate all this by having air and gas pass above the grate, and I protect the base of the brick-work by a removable water-box or ring connected with the water-heater. I do away with the extra regenerator, and utilize the heat of the escaping gas by carrying it through a boiler specially designed by me to be used in combination with my furnace. Through this same boiler, I carry also the products of combustion; as I find that in continuous operations, the hot zone of our regenerator gradually extends, so that these inevitably go away too hot. To blow them back into the furnace is useless, of course, and the most rational treatment is to absorb their heat by water, and so get the requisite steam at the lowest minimum of cost. This construction should send the products out at not over seventy-five degrees Celsius, and give from twenty-seven to twenty-eight cubic feet of gas per pound of carbon; and I believe, except in first firing up, that the boiler would require no coal. The generator being partly (or wholly, if preferred) sunk in a pit, the radiating surface is reduced, while the radiation of the top plates, which form a flush working-deck, can be utilized in drying the fuels. All my valves are worked by levers assembled at one central point, like a railroad switch-house, so that the labor is greatly reduced.

So much for the mechanical improvement of the apparatus. Now for some facts regarding the practical value of the gas. The question of a cheap development of power being one of universal interest, I may mention that the product in gas of 1½ pounds of carbon gives by the "Otto," one horse-power per hour: and the makers of this machine expect to get us a still better result by a slight modification of its construction, to adapt it to our gas, which requires less air than the coal-gas. The first of a series of eight furnaces of 250,000 cubic feet capacity each per twenty-four hours has gone into operation for the welding of large tubes and boiler shells, at Essen. This application was tested in England last season, and found to work excellently and economically. Lest you may not remember the *modus operandi*, I will explain it. The water-gas is sent to a small holder, whence it is drawn by a Root blower simultaneously with air, the proportion of air and gas being controlled by valves, the two being thoroughly mingled and driven through a main pipe, which is tapped to supply the welding machines. The furnaces for these are simply open arches, with the burner at the key, sending its flame downward upon the edges of the metal to be welded. This pipe or boiler shell is pushed under the flame and drawn out for the stroke of the steam-hammer. About two minutes are required to give a welding heat of twelve inches or more, according to the length of the burner. The mixture is delivered at the slit of the burner (1/16 of an inch wide) at a pressure of two inches of quicksilver, say half a pound, and the combustion is very intense and absolutely perfect. Of course the mixture is about as explosive as it can well be; but as the speed through the burner is greater than the backward propagation of flame (about 300 feet per second), no explosion is possible, unless the blower unexpectedly stops; and this is provided for by fitting India rubber ends to the main pipe, which, in such a contingency, are blown out with much noise but no damage.

The furnace at Essen turns out to be the best one ever built, making easily 10,500 cubic feet of gas per hour. Messrs. Schultz & Knaud, of Essen, not having expected so large a make, are not for the moment prepared to use so much in tube welding, and they will turn the excess into the canal of the Siemens gas-producers, thus burning it in their melting-furnaces.

IN our last issue, we erroneously spoke of Mr. Baxter as being well-known in connection with the hot-air engine. It should have been small portable engines.

ON THE SEPARATION OF SULPHUR FROM ITS GANGUE IN RABBIT HOLE SULPHUR MINING DISTRICT, NEVADA.

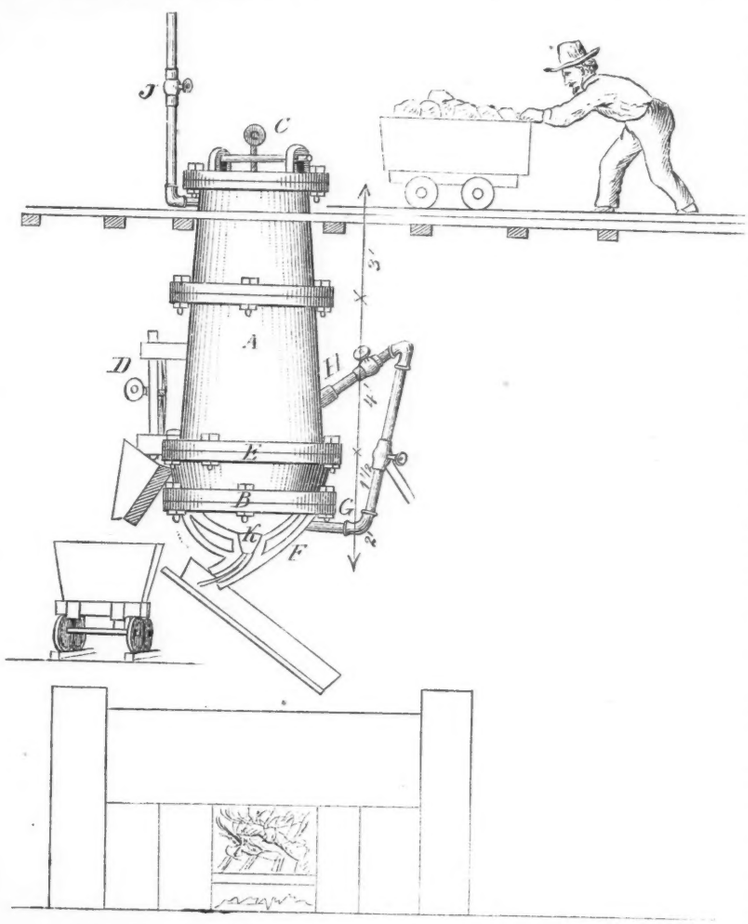
Specially Written for the Engineering and Mining Journal, by D. Van Lennep.

In the winter of 1880, I visited the sulphur mines at Rabbit Hole, Humboldt County, Nevada, about forty miles northwest of the Humboldt House station on the Central Pacific Railroad, and found the mode of extracting the sulphur from its gangue so great an improvement on the Sicilian mode that I think it deserves notice.

The district is situated on the southeastern side of the alkali desert, crossed by the emigrant road going to California through the Black Rock country and Honey Lake. The sulphur is found in irregular deposits in lime and magnesian rocks, having the same character as those found about sulphur springs in other parts of Nevada. The name of Inferno has sometimes been given to the district, on account of the numerous places where brimstone is discovered, say, in an area of about two square miles.

Several modes were first used for separating the sulphur from its gangue. When the mines were first discovered, much sulphur was found free from gangue, economically mined and separated from small quantities of it by melting in cast-iron kettles; but after a year or two of this kind of work, much sulphur was left as waste, mixed with from sixty to seventy-five per cent of gangue. Moreover, the high-grade free sulphur ore was much reduced in quantity, so that the first mode of separation had to be abandoned. After several trials and experiments, partially successful, the principal mines fell into the hands of a California company. This company, with the past experience before it, struck out in another direction, by taking advantage of the liquidity of sulphur at 232 degrees Fahr., and used steam at from sixty to seventy pounds pressure to run off the sulphur from its gangue. The manner in which this principle is carried out is the following:

A cylindrical cast-iron retort of the shape of a small shaft-furnace is used. It is made in four sections, about ten and a half feet high, and has two compartments. The upper one *A* has a top *C*, opened at will, to introduce the ore, the mixture, gangue, and sulphur; also an iron gate *D*, on the side at the bottom, to remove the gangue after the sulphur is extracted. Both are fastened tight by bars and screws. The lower compartment *B* is separated from the upper by a plate of sheet-iron *E*, perforated with holes about a quarter of an inch in diameter, through which the melted sulphur passes into the lower compartment. At the bottom of the latter is a basin with a false bottom heated by the introduction of steam at *G*. As soon as the upper compartment is filled with ore (a charge being about two tons), the top of the retort is closed very tight by the cast-iron plate, held by bar and screw, and steam at from sixty to seventy pounds pressure is introduced by a half-inch pipe *H*, about a foot above the perforated plate. About half an hour after the steam has been introduced, it is partially turned off and the lower hole in the lower compartment is opened by a valve *K*, pushed open from the outside. The melted sulphur flows out into a tank of cast-iron $4 \times 8 \times 2$ inches, under which a slow fire burns, to keep the sulphur from chilling. As soon as water comes out with the sulphur from the bottom of *D*, steam is introduced at a full pressure at *H*, and the rest of the sulphur and all obstructions are blown out in five minutes by the lower hole of *B* and the pipe *J*, near the top of the compartment *A*. The side-gate of *A* is then opened, the gangue is taken out with crow-bars, dumped into a car, and removed. Each operation takes about three hours. From twenty-five to forty per cent of the ore is sulphur. At the end of the day's operation, the sulphur in the iron tank is drawn in molds, cooled off, and is ready for shipment. There were two retorts in operation for twelve hours a day, at the time of my visit, producing from four to five tons of sulphur per day. The annexed diagram gives an idea of the retort used. It is placed on a strong wooden frame not represented, all accessories having been omitted, in order to give only a general idea of the construction and mode of operation. The basin with false bottom is represented in section. Owing to an error in the original drawing, this part was not shaded as it should have been. Some time since, a system similar to that described was proposed in France, with a view to its adoption in Sicily, but has not as yet been carried into practical operation.



FURNACE FOR THE TREATMENT OF SULPHUR ORES.

THE MINERAL REGIONS OF SOUTHERN NEW MEXICO.*

By B. Silliman, M.A., M.D., New Haven, Conn.

The regions referred to are in Socorro, Grant, and Dona Ana counties, and a portion of Lincoln County, embracing in the aggregate a very large area, of most of which our knowledge is as yet very fragmentary and superficial. It is only very recently that large portions of this region have been accessible. It has been full of danger from hostile bands of wandering Apaches, whose murderous raids have slain many adventurous miners and seriously prevented developments. But this evil has now been largely abated, and in many of the mining camps of this region there is no longer any danger from this cause.

Socorro Mines.—About three and a half miles back of the old Mexican town of Socorro, on the Rio Grande, chief town of the county of Socorro, are two or more large veins of heavy-spar, cutting across the face of Socorro Mountain in a northeast and southwest direction, and dipping at an angle of about forty degrees into the body of the mountain. These veins are in rhyolite, and, so far as could be seen in openings on the Torrence mine, which I examined, are without any clay parting or selvage. The average thickness of the Torrence vein may be about five feet, the thickness varying from one or two feet to thirteen feet. Upon the cleavage planes of the heavy-spar occurs, in visible patches, of a waxy luster and gray color, silver chloride, which gives value to the vein, from a few ounces up to one hundred and twenty ounces to the ton, averaging about forty ounces, as I was informed. Associated with the heavy-spar are several minerals carrying vanadium, one of which, in small yellow hexagonal prisms, is a mimetite containing vanadium, which has been mistaken for vanadinite. Further research is required to determine the specific identity of the other associated minerals, which form no part of the economic value of these veins. The lowest explorations were, at the time of my visit (October, 1881), about two hundred feet on the slope of the vein, which was dry at that time. No stoping had then been done, and by measurement about three thousand tons of ore were in sight.

A ten-stamp mill, of excellent construction, stood on the edge of the Mesa, over the river, nearly ready for work, constructed under the direction of William M. Courtis, M.E., who has also developed the mine. The whole expense of the mill and its appointments, which were very complete, was stated at about $75,000, and the entire enterprise was a good example of legitimate mining.

There were no fossils found by which to determine the geological position of the Socorro Mountain, which is one of an extensive system of eruptive rocks, which I traced to the base of the Magdalena Mountains, forty miles west of the Rio Grande and the town of Socorro.

The Magdalenas.—In a bold range of this name, about forty miles west of Socorro, is a range of metamorphic slates and limestones, with gneissic—probably Azoic—beds and quartzites, traversed also by porphyritic eruptions, where I found a strongly-marked mineral lode, carrying huge masses of lead carbonate, of low grade in silver, averaging, probably, twenty-five per cent lead, and under ten ounces silver. In a portion of this lode, known as the Juniata, the ore-mass exposed was fully forty feet in thickness, at a point about sixty feet from the surface, and the total thickness of this great chamber was not less than from sixty to sixty-five feet, as was shown by a drift driven in fully twenty feet beyond the workings in ore. At the end of this drift is a fluccan-like mass of from two to two and a half feet thick, which appears to be the east wall. The containing-walls are fissile slates on the west, and a quartzose porphyry on the east. The vein is nearly vertical. Within the walls, is a vast mass of decomposed material, impregnated with lead carbonates of every shade of color, from white to yellow-brown, with iron-stained and violet lithomarge. Probably one half the whole mass is waste material. Mr. E. W. Eaton, of Socorro, who worked this mine, assured me it required four tons of the ore to produce one of bullion. One million pounds of this bullion, produced on the ground and sold in St. Louis, assayed twenty-three ounces of silver, or about six ounces per ton of ore, while the assay called for from eight to ten ounces. Riñon char-

* Abstract of a paper read at the Washington Meeting of the American Institute of Mining Engineers.

coal was used in the smelting, and twenty-three bushels of coal, costing seventeen cents each, were consumed to the ton of ore smelted. Nineteen cubic feet of the ore were found to equal two tons, or nine cubic feet to the ton in place. As this ore-body is likely soon to be brought into close connection by rail with the system of the Atchison, Topeka & Santa Fé Railroad, and with cheap coke at Socorro, from coal mines lately opened on the east bank of the Rio Grande, near Socorro, it is likely to become an important factor in the metallurgical operations for which Socorro offers a convenient center.

Other portions of this vein, which I saw about a mile and a half to the south, were heavily charged with zinc-blende, on the Imperial location, where it has been opened by a shaft sunk in the ore-body, about eighty feet deep. The total explored length of this vein is about two miles. Beautiful green and blue calamine are found among the surface ores along the Vielly location, north of the Juniata, and anglesite, inclosing galena, was observed at the same surface openings. While much of the ore on this gigantic mineral lode is of low grade, its position favors exploration by tunnel on the course of the vein at several points, with the probability of the discovery of other large ore-bodies like that noticed in the Juniata. It waits the advent of cheaper transportation and fuel.

Of the mineral region immediately west of the Magdalenas, I saw only some hand-samples of ores, chiefly of lead. But among them was an ore from the Sophia, a small vein of heavy-spar, carrying extremely rich copper-silver glance, corresponding closely to the species Stromeyerite. But as I did not visit the locality, I can say no more of it. The magnetic variation of this district was, in October, 1881, 13° 45′ E., as given me by Mr. E. G. Shields, C.E.

The mountain ranges follow the general northeast and southwest course common to the region. South of Socorro, on the west side of the Rio Grande, are the Negrettas or Black Range, the Mimbres, the Burros and Mogallon Mountains, of which something more remains to be said; while on the east side of the Rio Grande, in Lincoln County, are the Oscuras Mountains, probably of Permian age; the Organ Mountains, the Nogals, and the Sierra Blanco or White Range of the Mescalaro Apache Reservation, and Fort Stanton, a portion of which I visited.

The Oscuras Permian Copper Beds.—In the Oscuras Mountain exist considerable deposits of copper glance, azurite, and malachite, carrying also a little silver and gold in a siliceous conglomerate, forming parts of the conformable beds in a considerably extended area of Permian rocks. The copper ores are largely found about the organic remains of fossil wood and various small plants, transformed into copper casts of the original structure, sometimes retaining traces of the carbonaceous material. The most important copper-bearing beds are capped by a strong quartzose or granitic conglomerate, above which are beds of sandstone and red marls; beneath are other conglomerates, clays, and dolomitic lime-rock. I was unable, from want of time, to make any exploration of these interesting beds, so closely resembling those of Russia, where they have been so fruitful a source of copper for many years. But I succeeded in securing the services of Dr. M. G. R. Fitzgartner, at that time in Santa Fé, to go down there in the interest of the owners. Dr. Fitzgartner's report is before me, and from his statements it appears these copper-bearing beds carry from ten or twelve per cent to sixty per cent of copper, with a little gold (one fourth ounce to one and a half ounces), and a few ounces of silver. The copper seams vary from a few inches to two or three feet in thickness, and they have a dip to the south from near the horizontal to 45°, the copper-bearing seams being a series of four, of which the strongest is immediately beneath the granitic conglomerate. These beds are about fifty miles below Socorro, near the wagon-road to White Oak mines, from which they are distant about forty miles to the south. Good coal exists near the Oscuras, on the east bank of the Rio Grande, and has been developed by the Atchison, Topeka & Santa Fé Company, with a branch road and coke-ovens, as I am informed by one of the officers of that road. I made also a careful examination of a much-cited deposit of vitreous copper near Fort Stanton, in the Mescalaro Apache country. The ore of this locality is fine as possible, but exists only in trifling quantity, and with no evidence of continuity. There is no vein, and it does not occur even in a bed. So there was no reward for a toilsome journey in a desolate region, but to counsel the total abandonment of further exploration.

The Lake Valley or Sierra Mines.—The Sierra mines are in the county of Dona Ana, New Mexico, near the point where Grant and Socorro corner upon it, lines established by a recent decision of the territorial legislature. Lake Valley is a name appropriately given to a secluded valley, surrounded by the foot-hills of the Mimbres or Negretta Mountains, in the upper angle of which is a small lake, hidden from view by aquatic plants, and vocal with water-fowl. This lake evidently once covered a considerable portion of the adjacent valley, the level surface of which everywhere yields water by shallow wells. The water for the mill is supplied from the lake, or from a well fed by its waters. The approach to the Lake Valley mines is by the Atchison, Topeka & Santa Fé Railroad from Nutt station, which is 1105 miles from Kansas City, about 450 miles from Pueblo, and 266 miles south of Santa Fé, or 104 miles from the old Spanish city of Socorro, now fast becoming the point of important mining industry, since the above railroad has supplied and is supplying transportation for the ores of silver, lead, copper, etc., and also for the coal of the near neighborhood. Lake Valley is, essentially, a dry region; but already water has been reached in mining, and the water from the lake has also been brought in by a line of iron pipe.

The extent of mining ground covered by the united claims of the Sierra Plata, Sierra Grande, Sierra Bella, and Sierra Apache mining companies, is a compact body of about 350 acres, over the whole of which exploration has been rewarded at numerous points by the discovery of silver ore in greater or less abundance. This area, held by these four companies in a compact body, is nearly a mile long on the diagonal from north to south, and about half a mile in the opposite direction. It is bounded by the edges of a valley of erosion on the east and west, by a hill of rhyolite or propylite on the south, rising rather sharply from the point of greatest depression in the Grande and Plata claims, while to the north the descent is rather abrupt from the borders of the Apache Company's locations to the level of Lake Valley beyond. Within this area, there is considerable diversity of surface. The lowest and most level part of the property is where the more important developments of rich ore had been made, when I first saw the property in October, 1881. This was true, especially on the Stanton and Lincoln claims, portions of the Plata and Grande grounds. To the north and west of these claims, the ground rises rather rapidly, and upon the upper edges of the Columbia, Strieby, etc., reaches an elevation of 250 or 300 feet, probably. From this western ridge, the ground falls to the east, where a shallow, longitudinal valley fairly divides the property into two pretty equal portions, as may be seen by a glance at the map and plans of the several claims. Early in the history of this property, considerable work was done upon the Columbia and Strieby claims of the Sierra Bella, and the Kohinoor and Crescent claims of the Sierra Apache. Indeed, it was from the Columbia shaft that the first surprising masses of solid chloride of silver were taken, and that were cut out by a handsaw. A shipment of ore from the Columbia shaft, made by former owners, gave returns, from over fifty tons of ore, of about 500 ounces per ton, and of this lot five tons carried 3600 ounces of silver to the ton. This information I obtained from the former owners.

The geological horizon of the Sierra mines is at the base of the Carboniferous. The fossils, which I collected there have been examined by Mr. Arnold Hague, of the United States Geological Survey, and formerly of the Fortieth Parallel Survey. He says: "Your collection of fossils interested me very much, and proves to be an important one from a geological stand-point, as they are a horizon at the base of the Carboniferous, and not far above the Devonian, although, as yet, no Devonian fossils have been found immediately below them. . . . This grouping of fossils bears a very close resemblance to several made in the Wahsatch and the ranges of Utah from the Wahsatch limestone. Below this group, which is regarded as corresponding to the Waverley, nothing which is characteristic has been found. . . . So far as I know, this grouping has never before been recognized east of the Wahsatch range."

The basement rock, laid bare by the erosion of the upper beds, at Lake Valley, is a heavy-bedded gray or blue non-fossiliferous limestone, in which and beneath it the silver ores are found. Above it are piled thin-bedded, shaly lime-rocks, full of fossils, and bearing no metallic ores, so far as known.* These upper fossiliferous beds have been extensively worn away by erosion, especially over the southern portion of the area, covered by the claims of the Sierra Grande and Sierra Plata companies, exposing the heavy basement lime-rocks, which here show frequent seams and cracks, filled with a dark brown—almost black—mineral, breaking with a bright red streak or powder. The gravel and boulders, resulting from the breaking-up of the lower measures, have lodged over and covered portions of the lower rocks. These loose materials have been penetrated by some of the shafts before reaching the metalliferous zone. This red ore is hematite iron ore (specular iron), carrying here almost always more or less silver as chloride. These dark seams somewhat resemble pitch, or asphaltum, and nothing could be more deceptive or less promising of value for silver. No wonder it was long overlooked.

The dip of the beds of this group of rocks is to the east. The angle of dip is clearly seen, both in the Columbia shaft, and, more recently, on a considerably more extensive scale, in the Strieby shaft, where it falls from about 30° near surface gradually, until at the depth of about 180 feet, where water has temporarily arrested exploration, it is quite flat, not more than 10° or 12°. The silver-bearing vein has for its cover or hanging-wall this regular bed of lime with a smooth, clay-like parting so far as followed. The significance of the fossiliferous beds here described will be readily appreciated, and the important key they afford in future exploration has a forcible illustration in the exploration of the deep shaft on the Hopeful, of which more detailed mention is made in the postscript to this article.

It will be understood, from what has already been said, that the chief ores at these mines are silver chlorides and silver lead carbonates, associated with specular or red hematite iron ore, and a certain amount of galena and manganese ores. The siliceous ores carry embolite, and some of them are rich in silver chloride, lead carbonates, vanadinite, and native silver. Gold is absent, unless in the most insignificant traces. Sulphurets are almost completely absent, galena being nearly the only exception.† This lead ore is frequently seen in small particles among the lead carbonates, and occasionally, masses of many pounds' weight are found, which have escaped the general decomposition which has converted this species into carbonate of lead.‡ The assay of a fine granular mass of this galena, nearly pure, gave me 117·88 ounces of silver.

(TO BE CONTINUED.)

JACKETING STEAM CYLINDERS OF HOISTING-ENGINES AND STEAM-HAMMERS.

Where fuel is as expensive as in many of our Western mining regions, questions affecting the economy of steam in the engines used deserve particular attention—a subject unfortunately not as thoroughly understood as it ought to be. The jacketing of steam cylinders, to avoid condensation of steam in the cylinders, is well known to exert an important influence on the fuel economy: but it is less generally known that this source of loss is particularly heavy with those engines which do not work continuously—for instance, hoisting-engines and steam-hammers. A German engineer, Herr Heim, has gathered some interesting figures bearing on this subject, which he communicated recently at a meeting of the German Society of Engineers. He quotes the following example to show the effect of jacketing on the consumption of steam in engines running continuously. A six horse-power portable engine, the cylinder of which was placed within the steam dome of the boiler, was run, cutting off at seven tenths of the stroke. Theoretically, the consumption of steam, making allowances for cushion, should have been 114·2 kilograms per hour. In reality, it was, according to the weighed quantity of feed-water used, 159 kilograms, or an excess of 35 per cent. With a non-condensing Wheelock engine, having a diameter of 464 millimeters, and cutting off at seventeen one hundredths of the stroke,

* It was these beds which furnished all the fossils seen by Mr. Hague. Professor Cope subsequently made another search, and found some new species of zoöphytes and crinoids, but nothing which changes the geological horizon, as indicated in the text.—July, 1882.

† The exception here alluded to is the pyrite found in the rhyolite or propylite as seen in the deeper exploration.

‡ It is not easy to say what has become of the sulphuric acid, equivalent to the sulphur of the lead sulphides (now carbonates). No anglesite exists, and no gypsum, as might most reasonably be expected.

the excess was 35 per cent. For condensing engines, the loss due to the greater consumption of steam is higher. As an average with engines running with five atmospheres boiler pressure, 500 millimeters diameter of cylinder, and from two to three meters piston speed per second, he gives the following figures for the excess in the actual consumption of steam over the theoretical quantity:

	Cutting off at		
	One tenth.	One fifth.	One third.
Without jacket	74 p.c.	62 p.c.	55 p.c.
With jacket	64 "	54 "	48 "

The influence of the piston speed is illustrated by the following example: A blowing-engine with a cylinder, not jacketed, 810 millimeters in diameter, 1570 millimeters stroke, and a piston speed of 0·785 meters, showed an excess of 96 per cent, while experience with similar engines running with two meters piston speed exhibited an excess of only 70 per cent. Condensing engines waste more steam. An engine without a jacket, having a 500-millimeter cylinder, and running with five atmospheres boiler pressure, was provided with condensation, and yielded 1·4 times as much power as before. At the same time, however, the excess of steam consumed over the theoretical quantity, which remained the same, had increased from 42 per cent to 62 per cent, so that the actual gain had not been as great as the increase in power would lead to believe, but only 23 per cent.

These examples show the effect of steam jacketing on engines running continuously. With those running at intervals the loss is heavier. A two-cylinder condensing hoisting-engine, with 600-millimeter cylinders and 1050 millimeter stroke, was cutting off, by means of the eccentrics, at seven tenths of the stroke, and by means of a gear, at three tenths. Although the weight of the rope was perfectly balanced, much more power had to be used, cutting off at seven tenths or under, to move the dead-weight during the first two or three revolutions. Then steam was cut off at three tenths, and from the third to the last revolution the steam was gradually throttled. Fourteen diagrams were obtained during one run, showing that the average effective steam pressure declined from 3 to 0 7 kilograms per square centimeter. The engine was started and stopped twenty-six times an hour, bringing up 1450 kilograms from a depth of 164·3 meters every time, the engine making 14·86 revolutions. The time for hoisting was thirty seconds, while the time for loading and unloading was 108 seconds, or 3·6 times as long as the actual hoisting time. From the fifth to the twelfth revolution of the engine, the speed is uniform, the engine making 0·8 revolutions, while the ropes have a speed of 8·8 meters per second. Calculating the theoretical consumption of steam of the engine, it would be 338 kilograms. In reality, however, it required 820 kilograms, or an excess of 142 per cent. This enormous excess Herr Heim attributes largely to the cooling of the steam in contact with the sides of the cylinders and the surface of the pistons during the period of rest.

THE VIENNA MEETING OF THE BRITISH IRON AND STEEL INSTITUTE.

M. Pourcel, in his paper on solid steel castings, already referred to in our last issue, took up the question of the occlusion of gases as affecting the density of fluid steel. He stated as a fact that, while the addition of ferro-manganese to a bath of soft metal is followed by a more or less violent reaction, accompanied by a disengagement of gas, the addition of the alloy of silicide of manganese instantly arrests all ebullition. M. Pourcel claims that the gas which escapes during the solidification of steel and causes blow-holes is carbonic acid, and that Dr. Müller's theory, based on the discovery of large quantities of hydrogen in steel, is erroneous. On the latter point, he is supported by Mr. E. Windsor Richards, of Middlesborough, who rejects Dr. Müller's analyses as probably vitiated by the peculiar circumstances under which the gas was collected, namely, by drilling holes into ingots under water. M. Pourcel holds that the beneficial effect of the addition of silicide of manganese to steel is due to its arresting the formation of carbonic acid, and he accepts Mr. Richards's explanation, "that, in the presence of silicon, no reaction is possible between carbide of iron and oxide of iron: it is the silicon which is oxidized, and carbonic oxide can not be formed; and it is a silicate that is the result of the intermolecular action." M. Pourcel holds that, so far as the occlusion of hydrogen is concerned, the presence, simultaneously with the silicon, of manganese, affects the question. Silicon diminishes the solubility of hydrogen in steel, and in the absence of manganese almost annuls it, while the quantity of hydrogen in the steel seems to grow in direct proportion to the percentage of manganese. It might be argued that therefore it would be best not to add a silicide of manganese, but silicon alone. Steel made with ferro-silicon alone, however, shows brittleness, which must be counteracted by the addition of manganese.

During the discussion which followed, Mr. Richards repeated the results of experiments of drilling steel and collecting the gases under water and under mercury, already published. Mr. Stead referred to the fact that thus far they had tried to get in vain at the cause of unsoundness of ingots in the Bessemer process. The results obtained in German works, where rail steel high in silicon and manganese is made, seems, in our opinion, to admit of the simple conclusion that what M. Pourcel has so successfully introduced into open-hearth practice is applicable also to the Bessemer process, when the prejudice against high silicon in rail steel is overcome. All the speakers agreed that the question of the occlusion of gases in steel and the effects of various metalloids upon it was a question as knotty as it was important. Mr. Webb, of the Crewe works, incidentally made the important remark that they were casting locomotive driving-wheels with success.

There is, perhaps, no subject of greater interest to the metallurgist, as well as to the mechanical engineer, than this one relating to the manufacture of sound steel castings. In our own country, a number of works are making machinery steel castings which are beginning to meet with much favor. Should it become possible to carry this manufacture to that degree of perfection that such castings can be put into the hands of the builders of machinery without any hesitation as to their uniformity of structure, the result as affecting the construction of machinery would be a very great one. We need only refer, as an instance, to such machinery as rock-drills, where lightness combined with strength is so imperatively demanded.

Mr. G. J. Snelus, of Workington, read a paper on

THE CHEMICAL COMPOSITION AND TESTING OF STEEL RAILS,

in which he highly commended the work done by Dr. Dudley, urging that his papers be bodily incorporated in the transactions of the Iron and Steel Institute. Mr. Snelus, after briefly summarizing Dr. Dudley's conclusions, differs from him as to the best chemical composition for steel rails. He said that the Northeastern Railroad, observing that Bessemer steel made in recent years was found to wear less well than that made earlier, now called in their specifications for a harder rail containing from 0·45 to 0·5 per cent of carbon. Mr. Snelus stated that he had made 500,000 tons of steel rails, approximating between 0·3 and 0·45 carbon, 0·06 silicon, 0·06 phosphorus, and 0·06 sulphur, and found them to wear so well that none had been rejected under his guarantee. The principal point why Mr. Snelus takes issue with Dr. Dudley's proposed formula is, that a sound ingot can not be made with metal having such a chemical composition. Either more carbon, more silicon, or more manganese would have to be introduced; and Mr. Snelus inclines to the opinion that probably silicon would be the safest because it would tend to produce solid steel. He thought that silicon might be raised to 0·10 or 0·15 per cent without seriously hardening the steel, and proposes the following: Carbon, 0·35; silicon, 0·10; phosphorus, as low as possible, but not above 0·075 per cent; and manganese. Mr. Snelus then takes up at length the subject of testing steel rails, which was intended rather to initiate discussion than to offer suggestions or to record facts. As the discussion was postponed to next year's spring meeting, we need not now present Mr. Snelus's views.

Mr. John Gjers, of Middlesborough, then read a paper on

THE ROLLING OF STEEL INGOTS BY MEANS OF THE SOAKING-PIT PROCESS.

It is well understood that in the fluid steel poured into the ingot mold there is a larger store of heat than is required for the purpose of rolling or hammering. Not only is there the mere high temperature of fluid steel, but there is the store of latent heat in this fluid metal, which is given out when solidification takes place. Attempts have been made, among others by Mr. A. Wilson, to utilize this test in such a manner as to save the cost of reheating the ingots before rolling. Reheating was necessary, because the steel ingot, when stripped from the mold, is too hot in the interior to be rolled. When the interior is cooled sufficiently, the exterior gets far too cold. Mr. Gjers has introduced a system of equalizing the heat of the interior and exterior of the ingot, when stripped, in such a manner that it is fit for rolling without reheating. The apparatus in which this is done he calls the "soaking-pit." A number of upright pits are built in a mass of brick-work, sunk in the ground below the level of the floor, such pits in cross-section being made slightly larger than that of the ingot. Each pit is covered with a separate lid at the floor-level, and after having been well dried and heated to redness by the insertion of hot ingots, they are ready for operations. Ingots placed in the pits, after from twenty to thirty minutes, lose so much of their internal heat, by an increase in the temperature of the cooler exterior, that they are uniformly heated throughout, the brick-work of the pit acting as an accumulator and regulator of the heat. During this soaking process, a quantity of gas exudes from the ingot, and completely fills the pit, thus entirely excluding the atmospheric air, and preventing any loss of metal by oxidation. Mr. Stead finds this gas to be composed largely of hydrogen.

There can be no doubt that Mr. Gjers's process is one of the most important recent improvements in steel practice. At the West Cumberland Steel-Works, Mr. Snelus has been for a brief period working ten holes, and has rolled 1700 tons of steel from soaked ingots. While Mr. Snelus pronounced the period of his trial too short to admit of any estimate of the saving, he had been able to work with only two out of his six reheating furnaces, and he had found that really only one was needed to heat ingots that had become cold. He ascertained that the number of short rails from the ingots worked in the pits was smaller than those reheated in furnaces. Mr. T. Hugh Bell, of the Darlington Works, who has also worked the pits for some time, as well as Messrs. Richards, Head, and Cooper, who had seen the process there, agreed in cordially indorsing its value.

THE CHEMICAL INVESTIGATION OF THE RETURN-AIR IN SAXON COLLIERIES.*

By Dr. Cl. Winkler.

The investigations recorded in this memoir were made for the commission engaged in the revision of the rules for the safety of miners in Saxony, and include analyses of the return-air both in gas-free and fiery mines, three pits being selected as types in each of the three coal-mining districts in the country, namely, Chemnitz, Zwickau, and Dresden, upon samples taken both on working days and Sundays. These were collected in sheet zinc vessels of about ten liters capacity, suspended to the roof of the gallery, and allowed to remain open for an hour, when they were closed by India-rubber stoppers and taken away to the laboratory of the Freiberg Mining Academy, where the eudiometric analyses were made. The amount of air passing at the time was determined from simultaneous anemometer, thermometer, and barometer observations.

The components determined by analysis were:

a. Dust. *b.* Water vapor. *c.* Oxygen. *d.* Nitrogen. *e.* Carbonic acid. *f.* Marsh-gas.

The dust was separated by filtering the air through spun glass, but in no case was an appreciable weight obtained from ten liters. If it had actually amounted to one milligram, Dr. Winkler concludes that the whole amount of coal-dust carried by the air could not exceed 43 kilograms in twenty-four hours, which shows that the air in these mines is practically free from dust. This is perhaps due to the circumstance that the air was found to be practically at its maximum of saturation with water, as determined by drawing the sample through a weighed chloride of calcium tube in the usual way. The oxygen was determined by absorption with phosphorus upon a measured volume of about 100 cubic centimeters, previously freed from carbonic acid by absorption with potassa. As the transference of the main sample had to be done under water, which has an appreciable solvent action on carbonic acid, the latter gas was deter-

* *Jahrbuch für das Berg- und Hüttenwesen in Sachsen*, 1882, p. 67.

mined upon a small special sample collected in a glass bottle in the mine, according to Hesse's method, which consists in the addition of a known volume of a standard solution of baryta-water, and shaking until the insoluble carbonate of baryta has completely separated, when the residual volume of unaltered solution is determined by a standard solution of oxalic acid, and the amount used calculated from the difference. None of the methods hitherto in use was found to be sufficiently delicate for the determination of small quantities of marsh-gas, and therefore a new plan was adopted, of passing from 5 to 8 liters of air which had been previously freed from every trace of carbonic acid over red-hot oxide of copper, and collecting the carbonic acid, formed by the combustion in baryta-water, as previously described. The volume of carbonic acid found corresponds to an equal volume of marsh-gas burnt. Nitrogen was calculated by difference in the ordinary way.

The results of the analyses, which are given in detail, show a considerable variation in the composition of the air, and more particularly in the proportion of carbonic acid. As the amount of this constituent is only slightly variable in atmospheric air, the variation is due to the products of respiration and the burning of lamps, but more particularly to gaseous exhalations from the coal and joints in the rock. That the latter is the more important source, is evidenced by the slight difference in the composition of the air on Sundays and working-days, the amount of carbonic acid being, as a rule, only slightly in excess on the latter. Marsh-gas appears to be invariably present, the amount being sometimes greater on working-days than on Sundays, and sometimes the reverse. The variation in these constituents is as follows, in volume, per cent:

Collieries and Districts.	Marsh-Gas.		Carbonic Acid.		Oxygen.	
	Week-day.	Sunday.	Week-day.	Sunday.	Week-day.	Sunday.
Lugau, Chemnitz..... ..	0·108	0·092	0·483	0·448	17·751	17·693
Bockwa-Hohndorf, Chemnitz	0·156	0·111	0·146	0·143	18·613	18·652
Deutschland, Chemnitz...	0 138	0 115	0·122	0·117	18·079	17·872
Brueckenberg, Zwickau.....	0·256	0·124	1·020	0·380	17·958	18 806
Oberhohndorf, "	0·069	0·054	0 345	0·285	18·536	18 667
Von Arnim's, "	0·018	0 025	1·076	0·952	18·641	18·461
Zaukeroda, Dresden.....	0·021	0·017	0·432	0·539	19·170	19·690
Von Burgk's, "	0·125	0·146	0·281	0·222	18·611	18·828
Hänichen, "	0·041	0·048	2·717	2·662	18·432	18·526

Collieries and Districts.	Water Vapor.		Nitrogen.		Volume of Upcast, Cub. Met. p. second.	
	Week-day.	Sunday.	Week-day.	Sunday.	Week-day.	Sunday.
Lugau, Chemnitz.....	3·475	3·446	78·183	78·320	4·028	4·236
Bockwa-Hohndorf, Chemnitz	4·190	4·187	76·894	76·907	7·732	6·043
Deutschland, Chemnitz.	3·384	3·331	78·277	78·565	3·162	2·882
Brueckenberg, Zwickau	3·422	3·425	77·345	77.265	4·529	4 233
Oberhohndorf, " ..	3·195	2·810	77·835	78·184	3·130	3·238
Von Arnim's, " ..	2·282	2·745	77·984	77·958	9 640	10·099
Zaukeroda, Dresden....	2·888	2·525	77·489	77·228	3·566	3·049
Von Burgk's, "	3·066	2 948	77·917	77·856	6·558	7·290
Hänichen, " ...	3·193	3·057	75·617	75·707	4·515	6·280

The variation in the proportion of nitrogen to oxygen is not only affected by the consumption of the latter by miners and their lamps, but there also is an actual increase in the former from the gas given out by the coal. It was not found possible to determine this, as that would have required elaborate measurements and analyses of the in-take air, which, under the conditions of the investigation, were impossible. An attempt has, however, been made to determine the actual amount of gas given off by the coal in twenty-four hours, by assuming the composition of the in-take air, the result being given in the following table, all the figures being given in cubic meters, equal each to 35 cubic feet:

Collieries.	Volume down-cast.	Volume up-cast.	Given off by Coal.				
			Nitrogen.	Carbonic acid.	Marsh-gas.	Water vapor.	Total.
Lugau, Week-day.	296,744	347,299	39,047	1,559	372	9,577	50,555
" Sunday....	311,690	365,990	42,454	1,514	338	9,994	54,300
Bockwa-Hohndorf, W	598,519	668,044	44,781	734	1,043	22,067	69,525
" " S.	468,756	522,115	34,299	558	580	17,922	53,359
Deutschland, W.	227,532	273,053	37,578	236	378	7,329	45,521
" S.	209,278	249,005	32,701	204	286	6,586	39,727
Brueckenberg, W.	338,087	391,136	37,653	3,850	1,090	10,546	53,049
" S.	323,441	365,731	30,790	1,255	454	9,791	42,290
Oberhohndorf, W.	241,541	270,432	21,258	836	186	6,611	28,891
" S.	252,338	279,763	21,797	696	151	5,751	28,395
Von Arnim's, W.	730,330	810,864	60,059	8,084	123	12,268	80,534
" S.	557,402	850,522	68,818	7,425	192	16,595	93,030
Zaukeroda, W.	284,293	308,102	16,018	1,216	64	6,511	23,809
" S.	247,787	267,610	13,759	1,340	47	4,677	19,823
Von Burgk's. W.	495,891	566,610	55,418	1,387	709	13,206	70,720
" S.	556,650	629,856	57,228	1,165	918	13,895	73,206
Hänichen, W.	346,104	390,096	23,827	10,458	160	9,549	43,992
" S.	483,818	542,592	31,722	14,249	280	12,543	58,774

From this, it appears that the total increase in volume of the return over the down-cast current, when reduced to the same temperature and pressure, varies from 7·4 to 16·6 per cent in extreme cases. In order to convey to the reader some idea of the quantities thus escaping from the coal, Dr. Winkler has calculated the carbonic acid as equivalent to coal containing 70 per cent of carbon, and he finds that the weight of carbonic acid given off by the coal is equivalent to from 400 to 17,750 pounds of coal; and that of marsh-gas, from 108 to 1770 pounds, in twenty-four hours.

Dr. Winkler, in conclusion, points out that these figures refer only to a particular condition of things, the observations having all been made during the month of August, 1881; and to get at the real variations in the composition of the air, it would be necessary to continue them over a longer period, say an entire working-year. He considers, however, that such a series of observation would be, perhaps, the cheapest, and probably the shortest method of solving questions of the highest interest for the well-being of coal-mining.—*Coal.*

PROGRESS IN SCIENCE AND THE ARTS.

The Volatilization of Metals in a Vacuum.—In a paper contributed to the French Academy of Sciences, M. E. Demarçay states that, in a vacuum, cadmium volatilizes at 160 degrees Celsius, an alloy of zinc and lead at 184 degrees, antimony and bismuth at 292 degrees, and lead and tin at 360 degrees.

Incombustible Paper.—The *Moniteur des Produits Chimiques* gives the following recipe for paper which is not destroyed by fire. Asbestos fiber of the best quality is washed in a solution of permanganate of potassa and bleached with sulphurous acid. Ninety-five per cent of the fiber thus prepared and five per cent of wood-pulp are mixed in water saturated with glue and borax. A paste is thus obtained which renders the paper fit for the reception of ink. Writing ink which will resist the fire is made of a mixture of chloride of platinum and oil of lavender.

Fertilizing Moss.—A novelty in horticulture is attracting considerable attention at the flower show of the Exhibition of the American Institute. A number of vigorous plants are shown which have for a more or less extended period been kept in a flourishing condition without any earth. The roots of these plants have been simply packed in Dumesnil fertilizing moss, which appears to possess all the elements necessary to their growth. M. Dumesnil's discovery is an interesting one, and many applications, both for floral decoration and for practical horticulture, will suggest themselves.

Phosphorus in Charcoal.—Swedish engineers have noticed that the quantity of phosphorus in the pig manufactured with charcoal is larger than that in the ore and fluxes, even assuming that all of it had gone into the pig. Jansen found that, when he melted ores in crucibles, the metal obtained ran lower in phosphorus than the pig obtained from the same ores. Sarnström, in 1881, made some analyses of charcoal, the results of which seem to lead to the conclusion that the excess is due to that fuel. Two general samples were taken, No. 1 containing 6·8 per cent of water and No. 2, 5·0 per cent. Of both, four pounds of undried material were burned, yielding 1·02 and 0·83 per cent of ash respectively. The former contained 1·64 and the latter 0·65 per cent of phosphorus, so that charcoal No. 1 had 0·0167, and No. 2, 0·0054 per cent of phosphorus; and assuming that the quantity of fuel used is about equal to the weight of pig produced, it will be seen that the charcoal carries about the above quantities of phosphorus into the cinder.

AT a special meeting of the stockholders of the Loiseau Fuel Company, at the Port Richmond works, on October 3d, Mr. W. A. Leavitt, of Philadelphia, was elected president, and Mr. Francis Robinson, of New York, vice-president. We understand that the Loiseau fuel will be burned under the boilers at the American Institute Exhibition in this city, during the week beginning October 23d.

GENERAL MINING NEWS.

ALASKA.

Miners returning for the season report the placer quartz mines to be yielding and looking well.

ARIZONA.

COCHISE DISTRICT.

ARIZONA COPPER PRINCE.—This company has obtained a preliminary injunction against the Copper Queen, which, it is alleged, is taking ore out of its ground. The Copper Prince has begun suit in the District Court for damages, laid at 50,000, and has filed a bond of $10,000.

The Benson smelting and reduction-works are about completed, and in a few days will begin operations. The promoters of the enterprise are Messrs. A. Byram, of Chicago; M. Salisbury, of San Francisco; and Hugh White.

GILA COUNTY.

The *Chronicle* states that Globe has now three furnaces running steadily, and before many months, it is expected that four more will be in operation.

The Old Dominion Company will move the two furnaces now at the Tanks to the site alongside of the Old Globe furnace, and may erect an additional one. Representatives of the Carrie Copper Company state that it is the intention of the company to start its furnace, already erected, as soon as possible.

PIMA COUNTY.

PIMA COPPER MINING AND SMELTING COMPANY.—The superintendent telegraphs: Shipped 43,000 pounds copper bullion since October 26th, and have 23,000 pounds ready for shipment.

TOMBSTONE DISTRICT.

The *Epitaph* says that the utilization of manganese as flux in the smelter of the Tombstone Mining and Milling Company at Charleston is something of vast importance to the district. Nearly all manganese ore carries more or less silver, which, under the new process, can almost all be saved, besides relieving smelting companies of the expense of freighting iron ore. The quantity of manganese ore lying as waste on the different dumps in this district is large, and under the new idea, can be made profitable.

LITTLE DEVIL.—A company to work this mine is incorporated under the law of Arizona. The superintendent has shipped a bar of bullion valued at $1000, the product of three tons of ore.

TRANQUILLITY.—A dispatch to the *Tribune* says that the mine has been shut down for an indefinite period of time. An injunction has been granted the Head Center Company against the Tranquillity, and extensive litigation is probable.

CALIFORNIA.

MARIPOSA.—We have received the following communication:

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: Through an extract in a local paper, my attention has been drawn to a communication in your columns from Mr. Mark Brummagim relative to the Mariposa estate, the litigation over it, its present status, etc. The statement is so wanting in accuracy that I request space for a reply. In 1874, several suits were pending in New York courts between Mr. Eugene Kelly and the company then owning the Mariposa estate, and its stockholders, or some of them. Mr. Kelly's claims were for a large amount, and counter claims of equal magnitude were set up against him. In the midst of this litigation, the issue of which was of course uncertain, the company became deeply insolvent and was sued for debts here in California, its property attached by the sheriff, and it was absolutely without means of payment. Some of its stockholders conceived the project of a new com-

pany in California, to which the property should be conveyed, and which should issue its stock in exchange for that of the old company, share for share, and assume its debts. This was termed a "reorganization under the laws of California;" the advantage proposed to be gained by it was the power which corporations have by law in this State to call in money from their stockholders by assessments on the stock. Such a reorganization, to be effectual for any purpose, obviously needs the consent of all interested. A California company was formed, deeds of the property executed, and perhaps some stock exchanged; but before further progress could be made, the catastrophe came in the shape of judgments and executions against the New York company, amounting in the aggregate to about $150,000.

Mr. Donohoe, down to this time, had no connection with the property, the company, or the pending controversies. He was aware of them, however, and saw in the crisis I have just sketched an opportunity to make peace between the contestants. At the sheriff's sale, he bought the property, and thereupon offered to sell it to the newly-formed California company for what it cost him and interest, with a sufficient sum in addition to enable him to buy up or settle Mr. Kelly's claims, which he offered to sell short and include in the transfer to the company. He offered them a year to pay in, and the option was a pure gratuity. It was so obviously advantageous to them that no doubt was entertained that they would use every effort to avail themselves of it.

In effect, at the end of six months, when Mr. Donohoe's title had become perfect, a contract of sale was made between him and the California company, in pursuance of which he deeded them the property and took a mortgage for the consideration money, which was to be paid in six, twelve, eighteen, and twenty-four months. Simultaneously a settlement was made between Mr. Kelly and the New York company, ratified by its stockholders, etc. The first installment of Mr. Donohoe's mortgage was paid, but only after some delay, and a foreclosure commenced. On the second, some payments were made on account; but it was never paid in full. Much money was collected from stockholders, but seems to have been spent otherwise than in the payment of the debts; Mr. Brummagim, who for some reason was allowed a wide discretion in management, can better give an account of the disposition of the funds and of the other details of the company's affairs than probably any one else; and as a suit for its liquidation is now pending here, he will, should he ever return to this State, have an opportunity to do so.

In August, 1877, Mr. Donohoe put his mortgage in course of foreclosure. The company resisted, setting up as a defense all the matters formerly in controversy between the New York company and Mr. Kelly, and alleging the debt sued for to belong to Mr. Kelly. The Farmers' Loan and Trust Company, which was made a party as second mortgagee, set up a like defense and filed a cross bill to set aside Mr. Donohoe's mortgage. The trial of these cases occupied five or six consecutive weeks; the testimony in print fills four large octavo volumes. Mr. Brummagim and all his witnesses were fully examined, and all objections to the testimony waived. The judge's decision negatived every one of the allegations sworn to by Mr. Brummagim and which he has repeated and served up to your readers in his communication to which this is a reply. It is, of course, possible that in all this the court may be wrong and Mr. Brummagim right. The public, however, is likely to think this decision of a legal tribunal of some weight in determining facts. Judgment and sale followed the verdict, and the property was sold for a sum which left a deficit of a few thousand dollars on Mr. Donohoe's mortgage. The purchaser was Mr. F. S. Wensinger, of this city. Afterward, Mr. Donohoe secured an option of the property from the buyer; and, to put it out of the power of any one to say that he had taken a valuable estate at forced sale without giving the owners a full opportunity of paying to save forfeiture, he gave the company, as an act of grace, a full month extra in which to redeem it. Their offorts to raise the necessary means were, however unsuccessful, and that opportunity was lost. On August 23d, the day it expired, a gentleman called on me in behalf of the company, to propose a scheme for the repurchase of the property by it, which I judge to be the same outlined in Mr. Brummagim's communication, and which he says is "probably under consideration." How much and how long it was under consideration will be understood when I tell you that, while the bearer of it was expounding the advantages of the proposal and giving reasons why it should be accepted, I was noting the following, which I immediately read to him as my answer to it: "Your proposal to me, on behalf of the Mariposa Land and Mining Company, of California, to obtain the privilege of purchasing the Mariposa estate for $100,000, payable within five years, with five per cent interest per annum, which you have this morning explained verbally to me, I decline to entertain in any way. I have personally offered a privilege to Judge Heydenfeldt, which expires to-day. If that be not availed of, I would rather not entertain any proposition from the Mariposa Land and Mining Company of California." Afterward, at Mr. Donohoe's request, I offered the property to Mr. George Bell, of New York, who is understood to be a large stockholder in the New York company. It was put in writing as follows:

"SAN FRANCISCO, Sept. 6, 1882.

"DEAR SIR: I am requested by Mr. Donohoe to make known to your client, Mr. George Bell, that if he, with others who have lost money in the stock of the Mariposa Land and Mining Company of California, or in Mariposa speculations, desire to purchase the Mariposa estate, for say half a million dollars, and a settlement of all litigation on the subject, he can do so by addressing himself promptly to him, either directly or through yourself. He will not, however, consent to treat, directly or indirectly, with Mr. Mark Brummagim, or with any person, company, or association with which he is in any way connected. Will you please communicate this information to Mr. Bell, whose reply will be awaited until October first next? Yours respectfully, JOHN T. DOYLE.

"W. C. BELCHER, Esq."

Mr. Belcher is Mr. Bell's attorney in the litigation; Judge Heydenfeldt is the president of the California company. The former has apprised me that an accident delayed the transmission of his communication to Mr. Bell, and the first of October has passed without any response by him to my offer; but I think no disinterested reader will fail to see that, if the Mariposa estate is lost to this company, and its stockholders sacrificed, if you please, for the payment of debts, they can not reproach Mr. Donohoe. He has three times offered them full opportunity to pay what it owes him and take the property. That they have not availed themselves of the opportunity, may be their own fault or that of some one else: it certainly is not his. Respectfully yours, JOHN T. DOYLE.

SAN FRANCISCO, Oct. 4, 1882.

THE BODIE DISTRICT.

The *Press*, in speaking of this district, says that there is great activity and energy displayed in and around the Bodie, Standard, Oro, and the Noonday mines. At the Bodie, a large force of masons and carpenters is at work preparing for the new machinery. The shipments of bullion from the Standard and the Noondays continue. The Syndicate mill is crushing rich ore, and the mine is looking first-rate.

GREENVILLE DISTRICT.

The *Bulletin* reports on the mines of that district as follows:

CHEROKEE.—Sinking in the shaft has been pushed steadily, the work being chiefly on the vein. The ore has improved considerably.

CRESCENT.—Arrangements have been made for starting up the mine, which has recently been sold to San Francisco parties.

GOLD STRIPE.—The cross-cut that was in progress has reached the ledge at a good depth, and the work of opening out will be pushed as rapidly as possible. The mill is working well.

GREEN MOUNTAIN.—During the first half of September, a succession of minor mishaps reduced the bullion yield something below the average, but the last half of the month the mill has done so well that the total will fall but little if any below the usual average

COLORADO.

ARAPAHOE COUNTY.

The new Grant smelter, near Denver, began operations October 8th.

BOULDER COUNTY.

CARIBOU.—According to the Boulder *Banner*, this company is again employing a full force of men and is hoisting a large quantity of ore. There are about 1200 cords of wood piled up in its yards. A large ventilator has just been erected on the shaft-house. Every thing is getting into first-class order for energetic work during the coming winter.

CLEAR CREEK COUNTY.

Arrangements, it is said, are making for the erection of a custom stamp-mill, to treat mill-dirt from the gold-bearing veins in Stewart Gulch and on Caledonia Mountain. These veins were all worked to a profit fourteen or fifteen years ago; but after striking refractory ore, the owners were compelled to close down.

ALICE.—This company, says the *Register-Call*, has had a very successful season's work sluicing off placer ground on Fall River. It has only fairly got its claims opened up for a more prosperous season's work in 1883. The same company is the owner of several promising lodes near that place, which will be more fully opened up.

ANCHOR MINING AND MILLING CO.—According to the *Register-Call*, this company's property was recently sold at sheriff's sale for $8675. The purchaser will make arrangements to resume work shortly.

CAMPBELL SMELTER.—Work is pushed, and it is thought that by the latter part of this month the smelter will be in operation on the refractory ores of the different mines surrounding Idaho Springs. The large ore-house has been completed and a portion of the machinery placed.

CARTER BANCROFT MILL.—The *Register-Call* says that the furnace is roasting heavy iron pyrites ore from the Gold Dirt lode, owned by Recorder F. Peck, at the rate of ten tons every twenty-four hours, at the expense inside of one dollar per ton. The total expense of roasting, amalgamating, settling, retorting, and producing the pure gold from this particular ore will not exceed $3.50 per ton, while $15 per ton in gold is the gross result per ton of the treatment. The expense of mining and delivering at the mill is three dollars per ton. So that this hitherto worthless ore is made to net the owners $8.50 per ton.

HIDDEN TREASURE.—Sinking the main shaft—which has already attained a depth of 1323 feet, it being the deepest shaft in Colorado—has been commenced. The vein gives a good showing in the bottom, and in the 900 and 1000-foot levels, as well as the 1200-foot west level.

PAY ROCK.—The *Courier* says that this company has decided to erect a forty-ton concentrating mill at Silver Plume, for the purpose of utilizing the large bodies of concentrating ore, which that mine has been noted for. The company has purchased the old Silver Plume water-power in the eastern part of Silver Plume, and work will begin at once upon the foundations, it being desired to have the building closed in before cold weather. Hartz jigs, and, probably, buddles will be used. A force of seventy-eight men is at present employed in the mine, sixty-two being lessees, and the remainder contractors.

CUSTER COUNTY.

DURYEE FURNACE.—The furnace started up October 5th.

GILPIN COUNTY.

DECATUR.—The superintendent writes that he has much faith in finding good ore in the working of the mine. A good-sized body of very rich ore was taken out near the bottom of the old 110-foot shaft, and he hopes to find a continuation of that ore-body at a little greater depth and a little west. Superintendent Pomeroy sunk the shaft 100 feet deeper last winter. The shaft is in fine condition throughout, and there is no water in it. Some work will be done in the hope of finding good ore near the surface at the easterly end of the Helmer mine. This ground yielded good ore at one time, and has been very little explored. Five assays of ore from the Decatur properties recently yielded from $6.26 to $4332.49 per ton in silver and gold, averaging $923.29 per ton.

LAKE COUNTY.

Our regular correspondent sends us the following:

The following figures represent the bullion and ore-shipments from this district, made during the past nine months, as reported quarterly by the smelters, mines, and ore-buyers.

	Pounds of lead.	Ounces of silver.	Ounces of gold.	Value of ore.	Total value of produce.
First quarter.....	23,380,473	2,042,323	3,056	$485,762	$4,044,167
Second quarter.....	20,415,627	1,838,596	2,886	599,059	3,073,772
Third quarter.....	22,605,015	1,743,876	6,548	1,326,111	4,575,334
Total for nine months.	66,401,385	5,624,795	12,490	$2,410,932	$12,393,273

For the same period of last year, the production was $9,689,502; showing an increase so far this year, of $2,703,771. The prospects in consequence are, that the production of 1882 will greatly exceed any previous year.

The ore-shipments from the district are not stated in tons, although they have been enormous, not only during the past three months, but the entire year. It is probably safe to estimate that 36,000 tons of ore have so far this year been shipped to Argo, Pueblo, Denver, and other points, representing a value of nearly two and a half million dollars. The ores shipped are about an average of those smelted here. They must, therefore, have contained not less than 8000 tons of lead, which, added to the lead in the base bullion shipments, give this district a product of 41,200 tons in the short space of nine months. The value of the precious metals is just about twice that of the lead, as follows: silver $6,409,691; gold, $241,800.

The low prices charged for treating desirable smelting ores have had the effect of forcing an unusually large production for several months past. The competition for smelting ores is still very great both among local and foreign smelters. The latter in particular are making every effort to secure large and long-standing contracts with the Leadville mines. Among a few of the smelters here, there is a scarcity of certain classes of ore, while others again have an ample stock, with daily receipts equal to their consumption. Owing to three and six months' contracts made by the Iron Silver and several other large producers, the output of ore at present is not very equally distributed among our reduction-works, and while some of them carry a million dollars' worth of ore in their bins and yards, others have scarcely any available supply beyond their daily receipts. So long, however, as the present output of ore is maintained, it is believed all will go well, and after the first of January affairs will adjust themselves again of their accord.

FRYER HILL.—The mines of Fryer Hill show little that is new, with the exception of those located on the extreme eastern portion of the hill. The Chrysolite, Little Pittsburg, Little Chief, Amie, Climax, and Dunkin report nothing of interest. The Matchless, Robert E. Lee, and Forest City mines have all three opened up new resources during the past week. In each instance, the newly-opened ore, bodies are rich chlorides of silver or horn-silver-bearing ores. In the Lee and Matchless, these bonanzas have been opened in driving northward from their former workings; and in the Forest City, in developments continued to greater depth, southeast of the shaft, about 100 feet. The silver chlorides in these mines

are not only found in the iron and underlying chert; but in the Lee mine, in a thick seam of talc and decomposed porphyry, giving this material a value of from $250 to $1000 to the ton.

LITTLE ELLEN HILL.—The mines of this section are doing much better than for many months past. Among the new additions to the regular producers, is the Izzard mine, owned principally by Mr. Izzard, of this city. A new shaft-house and hoisting machinery have lately been erected, and a new working incline driven to the ore-body, which is quite near the surface. The product of the mine, while running high in lead, is low in silver and very siliceous; nevertheless, it will make a profitable property. The Virginius Opulent, and several other mines, besides the Little Ellen mine, of the American Mining and Smelting Company, are producing regularly.

CARBONATE HILL.—The Catalpa mine, in September, produced ore to the value of $16,000, netting the company at least $10,000 above working expenses. The shipments of the month were 590 tons of ore, 644 tons of iron, and eleven tons of ore taken out by tribute workers, making in all 1245 tons. Manager Charles L. Hill now feels very sanguine of the future success of the mine. The Yankee Doodle mine of the Carbonate Hill Mining Company is also doing very well. The company has netted a great deal of money, comparatively speaking, in the past four months, and, besides paying off all its debts, has cash resources and ample rich ore. The shipments of ore nearly all average over $100 to the ton. A new building is erecting on the mine, over the entrance to the workings, by the new incline, and a steam-hoister, ore-bin, and other surface improvements are making. Mr. Bond, president of the company, has been here twice in the past three months.

Leadville mines pay $210,000 in dividends during October, as far as heard from. The Robert E. Lee has about 3000 tons of from twenty to thirty-ounce ore on its dumps. The Mike & Starr has suspended work pending the arrival of its new steam-pump. The Niles-Augusta is to resume work again at an early day. The Ætna produced about $20,000 during September. The Argentine mines, on Iron Hill, are producing about twenty tons a day. Work has been resumed on the Dillon lode, on the lower skirts of Carbonate Hill. The Black Prince, on Breece Hill, is being worked again, and shipping some ore. Drifting from the Forepaugh shaft, toward the Robert E. Lee workings, is progressing rapidly and with encouraging indications. The Robinson is reported to be hoisting ore to the full capacity of its machinery. The shaft is connected with the eleventh level, and the water is taken to the surface by the shaft, while the mineral is still run up the incline and out to the bins through the tunnel. The mine is said to be netting considerable money above its working expenses. W.

OURAY COUNTY.

EMMA MOUNTAIN.—After cross-cutting for 550 feet, says the *Times*, the vein was tapped, exposing eighteen inches of ore identical in character with that of the well-known Terrible, of which it is an extension. The vein is cut at a depth of 230 or 300 feet, giving a large body of ore to work upon the tunnel level. Drifts will be run and the production of ore begin immediately.

PARK COUNTY.

A correspondent of the Ten Mile *News* says that steps are taking for the consolidation of the following mines on Carbonate Hill: The Wolfe Tone, Agassiz, and Monte Cristo—which are now controlled by Mr. Stotesbury; the Maid of Erin, Brookland, Mahala, Big Chief, Castle View, and Clontarf. A consolidation of these various properties would cover an area of something like seventy acres, every acre of which is known to be mineral-bearing, or reasonably believed to be so. All the known overshoots of the Morning Star and Evening Star, the Henriett, and the Catalpa run into it, and in all probability extend as far as its eastern boundary. All these locations have been worked more or less, in the last three years.

According to the *Bulletin*, an agency for the Grant smelting-works will be established at Alma shortly, and a concentrator and sampling-works will be erected by the Grant people at London Junction.

Late Leadville exchanges contain the following:

CHRYSOLITE.—The new concentrating-mill will soon be completed and practical tests made.

FOREST CITY.—The new discovery recently made consists of hard carbonates and horn-silver, more nearly resembling some of the former rich ores in the Lee. Heretofore, the high-grade ores were mostly chloride-coated fragments of flint and chert.

HALL VALLEY DISTRICT.—The prospects of this section, says the Fairplay *Flume*, are very bright. Two concentrators are nearly completed and ready for operation. One is placed in the old mill at timber-line, and has made a trial run with very satisfactory results. The Quincy Reduction Company is placing the other in the old smelter of the Upper Platte Mining Company, the interior of the smelting building being entirely remodeled for that purpose. These two concentrators will utilize all the low-grade ores of the district and make them marketable.

LITTLE PITTSBURG.—Operations are temporarily suspended on the No. 6 New Discovery shaft, and the pumps drawn from the shaft.

MATCHLESS.—The recently reported new strike north of the north shaft is exceeding all expectations. The north drift and the cross-cut to the east both show from two to four feet of ore, assaying twenty-eight per cent in lead and 1600 ounces in silver to the ton.

MIKE & STARR.—All the miners were dismissed and paid up October 5th. The mine will be closed down for about thirty days, the time estimated to be required to receive and place in working order the new steam-pump ordered for this shaft. As soon as this addition to the machinery of the mine is made, a large and regular production will be resumed.

PARNELL.—This company has purchased, in addition to its other property, the Moscow and Napoleon lodes, on the south side of London Mountain.

ROBERT E. LEE.—A new strike of considerable importance has been made recently. The new developments were made a considerable distance northeast of the new pump-shaft. The lower level north from this shaft was continued for about 100 feet, and a cross-cut driven to the westward sixty feet, where a body of red clay ore was encountered a few days ago, two feet in thickness, and assaying 360 ounces to the ton. The drift also shows about fifteen feet of medium and low-grade ore.

WYANDOTTE.—The shipments of ore to the Boston & Colorado sampling-works began last week. Work is pushed vigorously at the mines.

YANKEE & BREECE HILL.—This property has been leased for nine months to Colonel Bright and others, owing to the fact that the company did not have the funds to perform further work.

PITKIN COUNTY.

CRITERION.—Work has been resumed.

SILVER ISLET MILL.—The mill, which is nearly completed, will cost about $16,000. The capacity will be twelve tons per day.

SUMMIT COUNTY.

GIBSON HILL.—The manager has been concentrating a dump of second-class ore at the Boston & Breckenridge smelter with good success. A car-load of concentrates was shipped to Denver recently.

ROBINSON.—The *Tribune* says that the mineral of the new strike continues to improve in quality and quantity as depth is obtained. The mine is shipping from forty to fifty tons of ore per day, and is working only a small force of men. It is expected that Manager Parker will return shortly, when a large number of workmen will be added to the force already employed. The east shaft has been connected with the eleventh level, and is only used at present to hoist and lower men into the mine.

ILLINOIS.

A dispatch dated October 12th, says that silver ore, assaying seventy-five per cent of silver, mixed with copper, has been discovered in the bed of Panther Creek near Secor, twenty miles from here. It is reported that about 1000 pounds have already been taken out.

MONTANA.

BOULDER DISTRICT.

According to the *Miner*, a large force of men is at work on the Deer Lodge, Sullivan, and Wilson mines. Tunnels are running on the leads, and are in thirty-five feet or forty feet. The ore-bodies are said to be large. The mines now worked are under bond.

NEVADA.

THE COMSTOCK LODE.

Late dispatches contain the following:

BULLION.—The complications of this company have been adjusted, and work is to be resumed immediately.

Mexican and Ophir are opening a joint station at the 3000 level.

ESMERALDA COUNTY.

COPPER KING.—A dispatch to the *Tribune* says that a recent discovery is causing considerable excitement among mining experts. Several persons who have just returned make more flattering reports than Janson, of New York, who estimated the value of the mine to the depth of fifty feet at about $2,000,000. Prof. W. P. Blake is now examining the property for Gashwiler. Burdick, the owner, is now here.

NEW MEXICO.

A seven-foot streak of free gold ore has been struck at a depth of 225 feet in the Occidental mine shaft, Black Range.

A half interest in the Sunnyside group of eleven undeveloped claims, in San Andres District, near Good Fortune Camp, has just been sold for $8500.

The discovery of a mine of pure graphite is announced as having been made in the Organ Range, near San Andres Cañon.

VIOLA.—This mine is opened to a depth of 230 feet, and shows fine pay-ore, which increases in body and value with development. A twenty-stamp mill and furnace combining all the latest improvements for working and desulphurizing ores will begin work.

UTAH.

STORMONT.—The flume at the mill has been completed, and machinery has started up. The mine is reported to be in good condition.

NEW COMPANIES.

ARIZONA.

Copper Monarch Mining Co. Capital, $1,500,000; 300,000 shares. Incorporators, Charles Chamberlain, Jr., J. V. Rich, J. V. N. Smith, Thomas Fox, H. J Douglas, J. W. Mitchell, T. Hurley, George Hoffman, J. T. McIntyre, John Keleber, Patrick Fox, J. W. Hancock, Jr., and M. Fox.

CALIFORNIA.

Virginia Creek Hydraulic Mining Co. Capital, $5,000,000; 100,000 shares. Operations in Mono County, Cal. Directors, R. W. Granniss, J. M. Quay, J. E. Walsh, D. E. Jones, and John Elbert.

COLORADO.

Bristol Mining Co. Capital, $500 000. Operations, La Plata District, Chaffee Co., Colo. Incorporators, Charles S. Libby, Daniel Sindlinger, and George M. Thompson.

Eagle Mining and Milling Co. Capital stock, $3,000,000. Operations, in Lake County, Colo.

Elmira Mining Co. Capital, $1,000,000. Operations, in Chaffee County, Colo.

Garfield Silver Mining Co. Capital, $300,000. Operations, Grand and Clear Creek counties, Colo. Incorporators, J. H. Becker, Peter Schaefer, Wigbert Egbert, and Henry Baumgarten.

Hopewell Mining Co. Capital, $2,500,000; shares, $10 each. This company takes the place of the Standard Company, and will pay the debts of the Standard and resume work on the Hopewell at once. Incorporators, Charles B. Browne, William C. Miller, and Henry J. Chase.

Huerfano Mining Co. Operations, in Custer County, Colo.

Moultrie Mining Co. Capital, $100,000; 100,000 shares. Operations, at or near Alpine, Colo. Incorporators, Charles T. Griffith and Timothy J. Doyle.

Simpson Mining, Milling, and Tunnel Co. Capital, $500,000; 20,000 shares. Operations, in Griffith District, Colo. Directors, G. G. Calkins, James M. Long, E. O. Lanphere, A. S. Williams, J. G. Parkhurst, Amos F. Hall, and H. M. Wright.

Springfield Gold and Silver Mining Co. Capital, $1,000,000; shares, $10. Operations, Clear Creek County, Colo. Directors, J. S. Crowell, C. D. Hauk, P. P. Mast, John Foss, and Ross Mitchell.

St. Vrain Copper Mining and Milling Co. Capital, $1,000,000. Operations, in Arapahoe and Boulder counties, Colo. Incorporators, William C. O'Brien, Frank H. Clifton, Charles H. Scott, C. L. Smead, and John P. Clark.

MONTANA.

Lee Mountain Mining Co. Capital, $2,500,000; 250,000 shares. Operations, in Wyoming and Montana. Directors, Herbert N. Nichols, of North Platte; John Caplice, of Montana; Robert Law, E. Nagle, Thomas Swan, and Samuel Rosendale, of Cheyenne; and Edward E. Sage, of New York.

NEVADA.

Ruby Hill Tunnel and Mining Co. Capital stock, $7,500,000; 150,000 shares. Operations, Ruby Hill District, Nev. Incorporators, H. K. Mitchell, James Kyle, J. McDermott, J. E. Jones, J. N. Williams, M. Walsh, E. Looney, Thomas Wethered, M. McDermott, Hank Knight, J. Heubner, T. E. Shine, E Bluett, and C. M. Mikel.

NEW YORK.

Devil's Basin Mining Co. Capital, $3,000,000; shares, $3. Operations, California. Incorporated by James Murphy, B. F. Crane, Jr., and P. T. Nougues. Office, New York City.

Frazier Gold Milling and Mining Co. Capital, $500,000; shares, $5. Operations, Mecklenburg, N. C. Incorporated by W. J. Sutherland, George A. Lawrence, J. A. Pritchard. Office, New York City.

Gowan Mining Co. Capital, $1,000,000; shares, $5. Operations, Yavapai County, Ariz. Incorporated by Charles Robinson Smith, George W. Kenyon, and Walter S. Logan. Office, New York City.

Little Chief Mining Co. increases the number of its trustees from five to seven, adding the names of Frank Rudd and William S. Tisdale.

New York and Camalote Mining Co. Capital, $1,000,000; shares, $100. Operations, Republic of Honduras, Central America. Incorporated by Byron E. Huntley. Charles A. Sherwood, Frank E. Williams, William B Sylvester, George C. Gordon, John F. Forbes, Henry D. H. Snyder. Office, New York City.

New York & Providence Mining, Milling, and Smelting Co. Capital, $1,000,000; shares, $5. Operations in counties of Lawrence, Pennington, and Custer, Dak. Incorporated by Benjamin W. Dyer, James M. Harner, and Frank E. Gilbert. Office, New York City.

NOVA SCOTIA.

Nova Scotia Gold Concentrating Co. Capital, $25,000; 2500 shares. For the purpose of concentrating sands or tailings from a certain gold quartz-crushery in the province, for the purchase of base ores, the purchase or location of mines, and the erection of works.

FINANCIAL.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Oct. 13.

There is very little if any change to report in the condition of the mining market from last week. The dealings are mostly confined to such stocks as Robinson, Silver Cliff, South Pacific, Taylor-Plumas, and Green Mountain, and of these very little can be said, with the exception that the latter stock continues to grow weaker. The Comstock shares, following the lead of the San Francisco market, have become very weak, and this has, no doubt, helped to further demoralize the market here. The sales of mining shares at all the Exchanges aggregate 386,621 shares, as against 535,340 last week.

The Comstock shares have been quiet and generally weak. California sold at 38@27c., with a business of 5900 shares. Consolidated Virginia was active and weak, selling at 99@68c. Sierra Nevada was quiet and weak at $5.25@$4.80. Union Consolidated was very quiet at $4.75. Mexican sold at $4.63@$4.50. Ophir, with a business of 195 shares, sold at $3.25@$3.13. Consolidated Imperial sold at 66c. Best & Belcher was quoted at $6½. Sutro Tunnel was moderately active at steady prices; the sales aggregate 17,600 shares at 28@30c.

The Leadville stocks were quiet and a little weak. Amie was active and steady at 15@17c. Chryolite was quiet and a little weak, selling at $1.95@$1.60 @$1.75. Dunkin sold at 34@33c., with a business of 800 shares. Hibernia was quoted at 6c. Iron Silver was quiet and strong, selling at $2.25@$2.05, the latter price being ex dividend. Little Chief was a little weak, with a fair business; it sold at 62@53@54c., with transactions of 5650 shares. Little Pittsburg was quiet and steady at $1. Climax sold at 12@10 @11c., with a business of 3200 shares.

The Bodie stocks were very quiet at weak prices Bodie Consolidated sold at $4@$3.50@$3.75. Bulwer was quiet and weak, selling at $1.10@90c.@$1, with a business of 2320 shares. Standard was weak, selling at $5.13@$4@$4.50. Goodshaw sold at 16c.

The Tuscarora stocks were quiet and generally weak. Grand Prize was quiet and a little weak at 80@75c. Tuscarora sold at 9@6c., with a quiet business. Argenta was quoted at 40c., assessment unpaid Belle Isle sold to the extent of 1000 shares at 40@35c. Independence had a fair business at prices irregular and a little weak; it sold at $1.60@ $1.25@$1.45, with a business of 7010 shares. Navajo was quiet and irregular at $5.50@$6. North Belle Isle was very quiet and a little weak, selling at 19@15c.

In the miscellaneous list, Green Mountain has been very active and continues to grow weaker; it has sold this week from 92@58c., closing at 68 to-day. There are rumors to the effect that the management of this company is endeavoring to raise $50,000. The company, which was in debt to the extent of $60,000 when the present board of directors assumed control, succeeded during the summer in paying off about $30,000 from profits of working. Latterly, the company is again falling behind, the ore having fallen off in grade. Adding the debt, the property is now selling at the rate of $100,000, and it is urged that the 92-stamp mill and the surface improvements are fully worth that amount. It is hinted that an organized effort is making to shake off outside stockholders. Hall-Anderson has had a fair business at strong prices, selling at $1.85@$2.10@$2.05. Horn-Silver has been quiet and strong at $8@$8.50. Rising Sun has had a fair business at weak prices, selling from 9@6c. Robinson Consolidated has been active and strong, through considerable short interest in the stock and good reports from the mine; it sold from $1.55@ $1.90, with a business of 63,050 shares. Bradshaw has been active and strong, selling at 37@45@43c. Cherokee has had a fair business at weak prices, selling at 21@15c. Decatur, with an active business, has grown weak; it sold at 79@64c., with transactions of 16,500 shares. Hortense has been active and steady at 10@13c. Lacrosse has been very quiet at steady prices, selling at 16@17c. Oriental & Miller has been rather quiet, though at steady prices; it sold at 16@14@15c. Silver Cliff continues to do an active business at strong prices, selling at 93@77 8 8c., with a business of 16,300 shares. South Hite, new, has had a fair business at steady prices, selling at 32@30c. The dealings in South Pacific continue to be very large, but the price does not vary to any extent; the sales aggregate 33,000 shares, at 15@13c. The State Line stocks have been almost neglected, and prices have been steady; Nos. 1 & 2 sold at 7@6c., and Nos. 2 & 3 at 17@19c. Taylor-Plumas has been active and strong at 11@14c.

It is proposed to open a Mining Exchange at Winnipeg, Manitoba. A preliminary meeting has been held, and the enterprise started with a capital stock of $20,000, divided into four hundred shares of $50 each.

The board of directors of the Highland Chief Mining Company, of Leadville, request all holders of bond interest coupons against the company to forward the same to George W. Trimble, treasurer, care of the Bank of Leadville, for payment.

The Henriett Mining and Smelting Company has been formed in London with a capital of £300,000 in £1 shares, to work the Henriett mine in Leadville. The vendors, whose representative D. H. Moffat, of Denver, seems to be, receive £250,000, of which £90,000 are in shares of the new company. Mr. G. M. Henty, in behalf of Taylor & Sons, made an examination, and in his report estimates the reserves at 23,508 tons, assaying thirty ounces of silver and twenty per cent of lead, "completely laid open," and 5500 tons, running twenty-two ounces of silver and twenty-six per cent of lead, partly developed, having a total net value of £100,000. Messrs. John Taylor & Sons are of the opinion that a working capital of £20,000 would be sufficient.

DIVIDENDS.

The Deadwood Terra Mining Company, of Dakota, has declared the regular monthly dividend of $30,000, payable October 20th.

The Homestake Mining Company, of Dakota, has declared a dividend of $50,000, payable on the 20th inst.

The Idaho Mining Company, of California, has declared the usual monthly dividend.

The Marguerite Gold Mining and Milling Company

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	SHARES. No. in 1000's	SHARES. Par Value.	ASSESSMENTS. Levied to date in 1000's.	ASSESSMENTS. Date and amount per share of last.	DIVIDENDS. Total paid to date in 1000's.	DIVIDENDS. Date and amount per share.	HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE: Oct. 7. H.	Oct. 7. L.	Oct. 9. H.	Oct. 9. L.	Oct. 10. H.	Oct. 10. L.	Oct. 11. H.	Oct. 11. L.	Oct. 12. H.	Oct. 12. L.	Oct. 13. H.	Oct. 13. L.
Alice, Mon.	400	25	*	....	400	De 81 10	.....	.....	.....	.....	2.00	.....	2.00	.....	3.15	2.50	2.05	.....
Amie Con., Co.	500	10	*	....	305	My 80 10	.16	.15	.16	.15	.16	.....	.16	.15	.17	.16	.17	.16
Atlantic, Mich.	46	25		....	140	Fe 82 2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Argenta, Ne.	100	100	200	Se 82 25	40	Fe 80 20	.....	.....	.....	.....	.....	.....	.....	.....	.40	.....	.....	.....
Bar & Walker, Ut.	100	10	*	....	60	No 80 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bassick, Co.	100	100	*	....	25	Fe 80 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belle Isle, Ne.	100	100	65	My 82 10	300	De 79 25	.....	.....	.10	.....	.....	.....	.35	.....	.35	.....	.....	.....
Black Bear, Ca.	80	100	15	Se 79 50	880	Se 82 30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher, Ne.	104	100	2562	Se 82 25	16397	Ap 76 1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bodie Cons., Ca.	100	100	125	De 81 50	1275	Oc 82 25	.....	.....	4.00	3.50	.....	.....	.....	.....	3.90	.....	3.75	3.65
Bos'n & Mon. Mon.	200	1	.....	....	280	My 82 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Breece, Co.	200	25	*	....	2	Fe 80 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bulwer, Ca.	100	100	30	De 77 50	110	Oc 82 10	1.00	.95	1.05	1.00	1.10	.90	.95	.....	.....	.....	1.00	.....
California, Ne.	540	100	530	Se 82 25	31320	De 79 50	.38	.36	.34	.33	.31	.28	.31	.30	.29	.....	.28	.27
Cal. & Hecla, Mch	100	25		....	21850	Au 83 5 00	.....	.....	.....	.....	552¾	.....	.....	.....	.....	.....	.....	.....
Calumet Con., Co.	100	10	*	....	50	Mr 80 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Caro Ina Con., N.C.	100	2	.....	....	6	Se 82 03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Castle Creek, Id.	100	1	.....	....	15	Oc 82 03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chaipa, Co.	300	10	*	....	180	My 81 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chrysolite, Co.	200	50	*	....	1600	De 81 50	1.97	1.85	1.90	1.65	1.65	1.60	1.65	1.60	1.65	.....	1.75	1.65
Climax, Co.	200	10	*	....	180	Au 80 30	.12	.10	.10	.....	.....	.....	.....	.....	.....	.....	.11	.....
Coin, G. Mg., Ga.	100	5	*	....	64	Au 82 04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Con. Va., Ne.	540	100	897	Au 82 30	42090	Au 82 50	.99	.82	.82	.74	.81	.76	.76	.73	.71	.70	.71	.68
Copper Queen, Ar.	250	10	*	....	500	Se 82 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crown Point, Ne.	100	100	2673	Fe 82 25	11588	Ja 75 2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
D'dw'd-Terra, Dk	200	25	*	....	835	Oc 82 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dunkin, Co.	200	25	*	....	200	Ju 81 7½	.34	.....	.34	.....	.34	.....	.....	.....	.33	.....	.....	.....
Eureka Cons., Ne.	50	100	100	My 76 1 00	‡	Jy 82 25	.....	.....	.....	.....	.....	.....	13.50	.....	13.00	.....	13.50	.....
Evening Star, Co.	50	10	*	....	1240	Se 82 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Excelsior, Ca.	100	100	300	Ja 82 1 00	875	Oc 80 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fa. de Smet, Dk.	100	100		....	400	Se 82 20	.....	.....	.....	.....	.....	.....	5.00	.....	.....	.....	.....	.....
Findley, Ga.	200	1	*	....	8	My 79 1c	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Freeland, Co.	200	25	*	....	50	My 80 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glass Pend., Co.	250	20	*	....	25	My 81 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Stripe, Ca.	150	10	*	....	70	Jy 81 15	.....	.....	.....	.....	.18	.....	.18	.....	.....	.....	.....	.....
Gild & Curry, Ne.	108	100	2473	Se 82 50	3826	Oc 70 $40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Prize, Ne.	100	100	295	Se 82 25	450	Se 80 25	.80	.....	.....	.....	.75	.....	.....	.....	.....	.....	.....	.....
Great Eastern, Dk	300	1	*	....	16	Jy 80 01	.....	.....	.....	.....	.03	.....	.....	.....	.....	.....	.....	.....
Gr. Mountain, Ca.	125	1	*	....	212	No 81 7½	.....	.....	.92	.....	.92	.90	.77	.72	.78	.53	.75	.58
Hale & Nor., Ne.	112	100	4903	Se 82 50	1598	Ap 71 5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hall-And's'n, N.S.	150	1	.....	....	7	Ja 82 05	.....	.....	2.00	1.85	2.10	2.05	2.05	.....	2.05	.....	2.05	.....
Hecla Con., Mon.	50	50	.....	....	342	Ap 82 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hiarrgia, Co.	200	25	*	....	180	Jy 81 40	.....	.....	.....	.....	.06	.....	.....	.....	.....	.....	.....	.....
Homestake, Dk.	100	100	200	Ap 78 1 00	1662	Oc 82 40	.....	.....	17.50	.....	.....	.....	.....	.....	.....	.....	17.50	.....
Horn-Silver, Ut.	400	25	*	....	1400	Au 82 75	8.25	8.00	.....	.....	8.00	.....	8.25	8.00	8.50	.....	.....	.....
Hukill, Co.	200	5	*	....	210	De 78 10	.15	.....	.....	.....	.18	.....	.....	.....	.....	.....	.....	.....
Indep., Ne.	100	100	185	Fe 82 15	225	Se 79 05	.....	.....	1.60	1.25	1.50	1.40	1.50	1.40	1.45	.....	.....	.....
In. Queen, Ne.	125	2	12	No 79 10	350	Se 82 05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Inyo, Ca.	100	5	*	....	45	Ap 82 05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron Silver, Co.	500	20	*	....	800	Oc 82 20	.....	.....	2.25	.....	2.10	.....	.....	.....	.....	.....	2.05	.....
Jocuistita, Mex.	100	100	.....	....	550	Au 82 1 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
La Plata, Co.	200	10	*	....	610	Se 82 30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leadville C., Co.	400	10	*	....	230	Au 82 05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leeds, Ut.	60	100	87	Ju 82 50	75	Oc 78 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Chief, Co.	200	50	*	....	700	Au 80 50	.62	.60	.62	.59	.60	.59	.60	.53	.59	.57	.59	.54
Little Pitts., Co.	200	100	*	....	1350	Mr 80 50	.....	.....	.....	.....	.....	.....	1.00	.....	.....	.....	.....	.....
Martin White, Ne	100	100	950	Se 82 25	90	Jy 79 30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Moose, Co.	200	10	4	....	550	Mr 78 25	.....	.....	.....	.....	.....	.....	.10	.....	.....	.....	.10	.....
Morning Star, Co.	100	10	.....	....	40	Jy 82 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Navajo, Ne.	100	100	295	Mr 82 20	50	Oc 82 25	.....	.....	.....	.....	6.00	.....	5.50	.....	.....	.....	6.00	5.63
N. Y. & Colo., Col.	50	20	.....	....	25	Jy 79 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N'h'n Belle, Co.	50	100	.....	....	2470	Oc 82 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13.25	.....
N. Belle Isle, Ne.	100	100	55	Se 82 15	45	Se 82 15	.19	.....	.19	.....	.15	.....	.....	.....	.....	.....	.....	.....
Ontario, Ut.	150	100	.....	....	4700	Oc 82 50	38.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ophir, Ne.	100	100	3395	Jy 82 1 00	1595	Jy 82 1 00	.....	.....	.....	.....	.....	.....	.....	.....	3.25	3.13	.....	.....
Osceola, Mich.	50	25	.....	....	810	Se 82 1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plumas, Ca.	100	10	*	....	151	Jy 79 8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quicks. Pref., Ca.	43	100	.....	....	654	Ju 82 6 00	.....	.....	.....	.....	.....	.....	42.0	.....	.....	.....	.....	.....
" Com., Ca.	57	100	.....	....	155	Ju 82	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy, Mich.	40	25	.....	....	3230	Au 82 5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rising Sun, Ca.	150	5	*	....	52	My 81 7¼	.08	.....	.09	.....	.09	.08	.08	.07	.....	.....	.07	.06
Robinson C., Co.	200	50	*	....	575	No 81 50	1.65	1.55	1.70	1.65	1.70	1.65	1.80	1.70	1.80	1.70	1.90	1.75
Robt. E. Lee, Co.	500	500		....	50	Jy 81 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savage, Ne.	112	100	5692	Se 82 25	4460	Ju 69 3 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nev., Ne.	100	100	5050	Se 82 1 00	100	Ja 71 1 00	.....	.....	5.13	.....	5.25	.....	.....	.....	4.8	.....	.....	.....
Silver King, Ar.	100	100	.....	....	1175	Oc 82 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver King, Co.	500	2	.....	....	50	Au 81 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Socorro, N. Mex.	2.5	100	.....	....	4	Mr 82 ¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spr'g Valley, Ca.	200	1	*	....	50	Ja 81 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard, Ca.	100	100	.....	....	3950	Oc 82 25	.....	.....	5.13	5.00	5.00	.....	4.75	4.50	4.50	4.00	4.75	4.50
Starr Grove, Ne.	200	10	*	....	16	Ju 81 05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stormont, Ut.	200	1	*	....	155	No 81 05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Joseph, Mo.	100	10	*	....	370	Se 82 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tip Top, Ar.	100	100	170	Mr 80 50	100	No 81 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	.....
Tombstone, Ar.	500	25	*	....	1350	Ap 82 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vizina, Ar.	200	25		....	140	Mr 82 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket	120	100	5338	Fe 82 1 00	2184	Au 71 2 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Non-assessable. † The Deadwood has previously paid $275,000 in eleven dividends, and the Terra $75,000. ‡ 48175.

SALES.—Alice, 800; Amie Consolidated, 16,700; Argenta, 216; Belle Isle, 1000; Bodie Consolidated, 670; Bulwer, 2320; California, 5900; Calumet & Hecla, 250; Chrysolite, 7250; Climax, 3200; Consolidated Virginia, 19,415; Dunkin, 800; Eureka Consolidated, 235; Father de Smet, 200; Gold Stripe, 100; Grand Prize, 1300; Great Eastern, 500; Green Mountain, 12,500; Hall-Anderson, 3900; Hibernia, 1000; Homestake, 210; Horn-Silver, 555; Hukill, 200; Independence, 7010; Iron Silver, 470; Little Chief, 5650; Little Pittsburg, 200; Moose, 300; Navajo, 1700; Northern Belle, 110; North Belle Isle, 900; Ontario, 50; Ophir, 195; Quicksilver, preferred, 200; Rising Sun, 8100; Robinson Consolidated, 63,050; Sierra Nevada, 235; Standard, 1355; Tip Top, 100. Dividend shares sold, 169,236.

NON-DIVIDEND PAYING MINES.

NAME AND LOCATION OF COMPANY.		NUMBER OF SHARES.	Par.	ASSESSMENTS. Total levied to date.	ASSESSMENTS. Date and amount of last.		HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE. Oct. 7. H.	Oct. 7. L.	Oct. 9. H.	Oct. 9. L.	Oct. 10. H.	Oct. 10. L.	Oct. 11. H.	Oct. 11. L.	Oct. 12. H.	Oct. 12. L.	Oct. 13. H.	Oct. 13. L.
Advance															27c	26c		
Albion, s. L	Nev.	150,000	100	397,500	Jun. 82	25												
Allouez	Mich																	
Alpha	Nev.			420,000	Mar. 82	50												
Alta	Nev.	100,800	100	1,641,600	May 82	50												
Alta-Montana, G	Mon.	500 000	10	*			33c				30c		30c					
Am. Flag, s	Colo	125,000	10	300,000	Jun. 77	25												
Barcelona, G	Nev	200,000	25	*			7c		8c				8c					
Battle Creek																		
Bear Creek	Cal.	300.000	1												24c	22c	24c	23c
Beauce																		
Bechtel Con., G	Cal.	100,000	100	165,000	Dec. 81	25												
Best & Belcher, G. & S	Nev.	100,800	100	1,295,390	Jul. 82	50									6.13			
Big Pittsburg, S. L	Colo	200,000	100	*							33c							
Black Jack, G	Cal.	100,000	2½															
Bonanza Chief	Mon	1,000.000	1	*			3c											
Bondholder	Colo	200,000	2½				6c											
Boston Con., G	Cal.	100,000	100	70,000	May 82	20												
Bradshaw, S	Ariz	225,000	10	*			37c		38c		44c	40c	45c	42c	43c		44c	43c
Buckeye	Colo	100,000	5	*														
" pref.									26c	22c			26c	24c	26c		27c	26c
Bull-Domingo, S L	Colo	200,000	50	*			4c											
Bullion, G. S	Nev.	100,000	100	3,697,000	Aug. 82	50												
Bye and Bye	Ariz	100,000	10	*			4c											
Calaveras, G	Cal.	800,800	1	*			6c		6c				5c					
Clav'r'a W. & M. Co	Cal.																	
Cal., B. H., G	Dak.	100,000	100	480,000	Au. 82	15			1.85		1.85							
Carbonate Hill, S L	Colo	200,000	10															
Catskill, S	Nev.	300,000	5															
Central Ariz'na, S	Ariz	100.000	100				70c	69c			61c	60c	62c	61c	61c	59c	60c	
Chapparal	Cal.								2c				3c					
Cherokee, G	Cal.	150,000	10				21c				18c		19c	18c	17c	15c	16c	15c
Chollar					Sep. 82	5)												
Clarence	Can.																	
Colorado Cent'l, S	Colo	300,000	10															
Col'mb'a Con., G. S	Nev.	100,000	50															
Cons. Imp'ri'l, G. S	Nev.	500,000	100	1,425,000	Jan. 82	10	6c	5c					5c	4c				
Con. Pacific, G	Cal.	60,000	100	141,000	Au. 82	25												
Crescent, S L	Colo	300,000	10	*														
Crowell, G	N. C.	50 ,000	1				4c				6c				6c		6c	
Dahlonega, G	Ga.	250,000	1	*			3c											
Dardanelles, G	Cal.	100,000	10															
Decatur							79c	70c	77c	74c	76c	73c	74c	69c	70c	67c	68c	64c
Dunderberg, S	Colo	150,000	10	*			10c		9c		10c		10c				9c	
Durango, G	Dak.	500,000	1	*														
Eastern Oregon																		
Empire, S	Ut'h	100,000	100								15c							
Enterprise	Colo										61c	60c	60c		60c		61c	60c
Exchequer	Nev.	100,000	100	630,000	Jan. 82	25												
Globe Copper	Ariz.																	
Gold Placer, G	Colo	200,000	25	*														
Goodshaw, G	Cal.	100,000	100	100,000	Sep. 82	10	16c		2c		2c							
Granville, G	N. C.	300,000	1	*														
Harshaw, S	Ariz	100,000	100															
Head Center, S	Ariz	100,000	100	160,000	May 82	20												
Hortense, S	Colo	200,000	10				12c	11c	11c	10c	11c				13c		13c	
Index	Cal.																	
Julia, G S	Nev.	110,000	100	1,391,000	Jan. 82	20												
Kossuth, G S	Nev.	108,000	100	421,200	Aug. 77	15												
Lacrosse, G	Colo	100,000	10	*			16c		16c				17c	16c			17c	
Leviathan, S	Nev	100,000	100	380,000	Sep. 82	25												
Lucerne, S	Colo	500,000	10	*														
Mariposa Pref., G	Cal.	50,000	100	1,687,500	Dec. 81													
" Com., G	Cal.	100,000	100	1,950,000	Feb. 82													
May Belle, G	Cal.	100,000	100	84,000	Dec. 81	20												
Mayflower, S	Colo	100,000	100	*														
Mexican, G. S	Nev.	100,800	100	2,146,600	Oct. 82	81									4.63		4.60	
Michoacan Synd.	Mex.																	
Miner Boy, G S L	Colo	500,000	10	*														
Miller	Nev.	200,000	25															
Mono, G	Cal.	50,000	100	512,500	Sep. 82	25												
Moose Silver, S	Colo	300,000	10															
Nevada Syndi																		
North Standard, G	Cal.	100,000	100	20,000	Nov. 81	10												
N. Horn-Silv'r, S L	Utah	400,000																
Noonday	Cal.	60,000	10	148,000	Sep. 82	25												
Old Dominion, C	Ariz	200,000	100	*														
Oriental	Nev.	200,000	10															
Ori'nt'l & Miller, S	Nev.	400,000	25				16c	15c	15c	14c	14c		14c		15c		15c	
Overman, G S	Nev.	115,200	25	3,604,700	May 82	25												
Potosi	Nev.	112,000	100	476,000	Sep. 82	25												
Quartz Creek			100				11c	10c	12c	11c					12c	11c		
Rappahannock, G	Va.	250,000		*							11c						11c	
Red Elephant, S	Colo	500,000	1	*														
Retort			10															
San Pedro, G S L	N. M	400,000																
Silver Cliff, S	Colo	200,000	25	*			93c	92c	92c	90c	88c	77c	89c	86c	89c	88c	89c	83c
Silver Islet	Can.		50															
Sonora Con	Mex.																	
South Bodie, G	Cal.	100,000		100,000	Mar. 82	15												
South Bulwer, G	Cal.	100,000	100	195,000	May 81	25												
South Hite	Cal.	100,000	100		May 82	10	32c	31c	30c		32c	31c	30c		32c	31c	30c	
South Pacific	Cal.		5				15c	14c	15c	14c	14c		14c		15c	13c	14c	13c
State Line No. 1, S	Nev.	200,000	1															
" No. 2, S	Nev.	200,000	25															
" No. 3, S	Nev.	200,000	25															
" No. 4, S	Nev.	200,000	25															
" Nos. 1 & 4, S	Nev.		25										6c		7c		6c	
" Nos. 2 & 3, S	Nev.						17c		17c		17c		18c		18c		19c	18c
Sutro Tunnel	Nev.	2,000,000		*			30c	29c	30c	28c	31c	29c			30c	29c	30c	
Taylor Plumas			10				12c		12c	11c	13c		13c		14c		14c	
Tioga, G	Cal.	100,000		275,000	Jul. 82	10												
Tuscarora, S	Nev.	100,000	100	110,000	Oct. 81	15	9c		9c		9c				7c		7c	6c
Unadilla, S	Colo	500,000	100	*														
Union Cons., G. S	Nev.	100,000	1	1,380,000	Mar. 82	81							4.75				4.75	
Utah	Nev.	20,000	100	1,320,000	Ju . 82	81												
Vandewater, S	Nev.	200,000	100	*			20c											
Washington, S	Ariz.	200,000	10								11c	8c						
Whalen Copper	Nev.	100,000	25				20.75	20.50	20.50		21.00	20¾	17.00		21.00		21.00	
Wide West																		
Willshire, G	Cal.	50,000	5	*														

* Non-assessable.

SALES.—Advance, 1000; Alta-Montana, 1100; Barcelona, 1700; Bear Creek, 800; Best & Belcher, 150; Big Pittsburg, 300; Bonanza Chief, 1500; Bondholder, 200; Bradshaw, 9000; Buckeye, preferred, 3900; Bull-Domingo, 1000; Bye and Bye, 800; Calaveras, 1700; Caledonia, B. H., 300; Central Arizona, 1725; Chapparal, 3000; Cherokee, 6500; Consolidated Imperial, 3400; Crowell, 2500; Dahlonega, 500; Decatur, 16,500; Dunderberg, 200; Durango, 2400; Empire, 50; Enterprise, 5800; Goodshaw, 1000; Granville, 1000; Hortense, 8500; Lacrosse, 2400; Mexican, 335; Oriental & Miller, 8500; Quartz Creek, 5800; Rappahannock, 1600; Silver Cliff, 16,300; South Hite, new, 5100; South Pacific, 33,000; State Line, Nos. 1 & 4, 4300; Nos. 2 & 3, 5400; Sutro Tunnel, 17,600; Taylor-Plumas, 32,700; Tuscarora, 3800; Union Consolidated, 420; Vandewater, 400; Washington, 2800; Whalen Copper Co., 405. Non-dividend shares sold, 217,385. Total shares sold at all the Exchanges, 386,621.

has declared a dividend (No. 3) of twenty-five cents per share, payable at Boston, October 10th.

The Northern Belle Mining Company, of Nevada, has declared a dividend of fifty cents per share.

The Pleasant Valley Mining Company, of California, has declared the usual dividend.

The Contention Consolidated Mining Company, of Arizona, has declared a dividend of twenty-five cents per share, payable October 28th. Transfer-books close on the 18th.

MEETINGS.

Candela Mining and Smelting Company. Annual meeting of stockholders, November 1st, at twelve M., at the office of the company, No. 233 South Third street, Philadelphia.

North Star Mining and Smelting Company, No. 234 Broadway, Room 34. Special meeting of stockholders, November 2d, at eleven A.M., to act upon sale of certain property of the company.

Ophir Gold Mining Company, No. 30 Cortlandt street. Adjourned annual meeting of stockholders and election of trustees, October 17th, twelve M.

San Catarina Copper Company, No. 40 Broadway. Annual meeting of stockholders and election of directors, October 18th, twelve M. to one P.M. Books close October 8th, and reopen October 19th.

University Gold Mining Company. Meeting of stockholders, October 21st, at twelve M., at office of Smith Sheldon, No. 8 Murray street.

White Quail Mining and Smelting Company, of Colorado. Annual meeting of stockholders, October 17th, at the office of the company, Philadelphia.

REVIEW OF THE SAN FRANCISCO MARKET.

The "bottom" has fallen out of the recent boom in the San Francisco market, and this week has witnessed a general decline in the whole list. The chief cause for this, it is stated, is the necessity for levying further assessments on the holders of the Comstock shares, in order to continue the work at the mines, and this has had a depressing effect on the market. Union Consolidated has levied an assessment of one dollar per share, and Mexican follows with a like assessment, and others are, no doubt, to come. The stocks of the middle or Chollar group mines have also been weak, and the general belief is now, that the new drift in the Chollar, which is in 270 feet, and which was to prove so important, will not amount to any thing. All hope for dividends from the Comstocks has, therefore, for the present, been abandoned; and although the outside stocks are the only ones that dividends could be expected from, there has been no effort made to advance them, and consequently they have been quiet and steady.

MINING STATEMENT.

The following statement shows the financial condition of the companies named on October 1st:

	Cr.	Dr.
Alta	$13,417.49½	
Andes	3,711.45	
Albion		$71,544.88
Argenta		4,080.65
Belle Isle	5,278.64	
Bodie Consolidated	67,308.09	
Benton Consolidated	6,290.32¾	
Bulwer Consolidated	30,939.34	
Best & Belcher	16,328.19	
Bechtel Consolidated		3,005.36
California		35,054.15
Crown Point	22,482.58	
Consolidated Virginia	140,488.56	
Chollar	16,134.16	
Day*		152,236.43
Grand Prize		5,046.32
Gould & Curry	47,623.87	
Hale & Norcross	45,393.46	
Lady Washington	1,456.54	
Mexican	26,206.37	
Mono	2,423.30	
Northern Belle	98,659.86	
North Belle Isle	457.77	
Navajo	75,400.07	
Oro	3,955.30	
Ophir	83,239.86	
Occidental	7,178 77	
Potosi	5,354.90	
Savage	1,489 80	
Standard	54,512.83	
Sierra Nevada	64,789.42	
Star (new indebtedness)		17,057.32
Star (old indebtedness)		36,833.84
Silver King	67,450.00	
Tioga Consolidated	2,713.45	
Union Consolidated		9,308.37
Utah	1,283.41	

* Unsold bullion, $157,618.52.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY.	CLOSING QUOTATIONS. Oct. 6.	Oct. 7.	Oct. 9.	Oct. 10.	Oct. 11.	Oct. 12.
Alpha	1¾	1½	1½			1⅝
Alta	11-16	11-16	¾	21-32	21-32	21-32
Bechtel			1-16			
Belcher	27-32	¾	¾	¾	21-32	21-32
Best & Belcher	6½	6⅝	6⅝	6⅝	6⅛	6
Bodie	3⅞	3⅞	4	4	3¾	3¾
Bullion	7-16	½	½	½	7-16	7-16
Bulwer			1	1		
California	11-32	11-32	5-16	5-16	5-16	5-16
Chollar	2¼	2⅛	1⅞	2	1⅝	1⅛
Con. Virginia	29-32	13-16	27-32	11-16	11-16	21-32
Crown Point	1¼	1¼	1¼	1⅛	1⅛	1⅛
Eureka Con	14	14	14	14	13½	
Exchequer	13-32	13-32	13-32	5-16	11-32	5-16
Gould & Curry	4	3¾	3⅞	3¾	3⅝	3⅝
Grand Prize	¼	9-16	13-32	13-32	13-32	11-32
Hale & Norcross	2⅜	2¼	2⅛	2	1⅞	2
Manhattan						
Martin White	4⅜	4⅛	4¼	4	4⅜	4⅛
Mexican	5⅛	5⅛	5	5	4⅛	4⅝
Mono	½		½	½	13-32	5-16
Mount Diablo	4				4	4
Navajo	6¼		6⅛	6⅛	6	5¾
Northern Belle	12¾				13	12¾
Noonday	¼	¼	¼	3-16	3-16	
Ophir	3¼	3¼	3¾	3⅛	3⅛	3⅛
Oro	¼	3-16	3-16	3-16	5-32	5-32
Overman	5-16	3-16	¼	¼	¼	¼
Potosi	1½	1⅜	1⅜	1⅜	1⅜	29-32
Savage	1⅝	1½	1½	1¼	1⅜	1⅜
Scorpion	13-16	13-16	13-16	13-16	¾	¾
Sierra Nev	5½	5¼	5	5⅛	5	5
Silver King	12	12	12	12	12⅛	12¼
Tip Top						
Union Con	5⅜	5¼	5⅛	5	4⅜	4⅞
Wales Con						
Yellow Jacket	1⅜	1¼	1⅜	1⅜	1¼	1¼

BOSTON MINING STOCKS.

	Oct. 5.		Oct. 6.		Oct. 7.		Oct. 9.		Oct. 10.		Oct. 11.		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Allouez	2⅛	.....	2⅛	.....	.....	.....	2⅛	.....	2⅛	.....	.....	.....	400
Atlantic	.....	.....	.....	.....	.....	.....	16.00	.....	.....	.....	.....	.....	60
Aztec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Blue Hill	.....	.....	.....	.....	.....	.....	.....	.....	.75	.....	.....	.....	200
Bodie Con	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bonanza D	3½	.....	3½	.....	3⅝	3 9-16	3⅝	3½	3⅝	.....	3⅝	3½	2,500
Bruns. Ant	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bulwer	.....	.....	1.00	.....	.....	.....	.....	.....	1.00	.....	.....	.....	200
California	.....	.....	.....	.....	.....	.....	.....	.....	.32	.....	.....	.....	100
Cal. & Hec	254½	.....	254	.....	.....	.....	254	252	252	.....	252	.....	37
Carbon. Hill	.....	.....	.....	.....	.75	.....	.75	.....	.....	.....	.....	.....	400
Catalpa	1.30	1.27½	1.27½	1.25	1.25	.....	1.25	1.22½	.....	.....	1.27½	1.2	2,215
Central Ariz	.....	.....	.....	.....	.....	.....	.68	.....	.....	.....	.....	.....	100
Cherryfield	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chrysolite	.....	.....	1.65	.....	.....	.....	.....	.....	1.80	.....	.....	.....	150
Con. V'ginia	1.05	.....	.....	.....	1.00	.....	.....	.....	.....	.....	.....	.....	200
Copp'r Falls	.....	.....	.....	.....	.....	.....	.....	.....	2.00	1.50	2½	2.00	600
Crescent	.50	.....	.50	.....	.50	47½	47½	.....	.50	.45	.50	.....	2,675
Cumberl'd	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
"Cusi"	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Deer Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Denver City	.....	.....	.....	.....	.....	.....	.....	.....	.25	.....	.....	.....	500
Duncan	.....	.....	.....	.....	.....	.....	.....	.....	12½	.....	.....	.....	200
Dunkin	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Empire	.51	.46	.60	.47	.49	.48	.48	.46	.46	.43	.40	.4	16,225
Eureka	.....	.....	.....	.....	13.75	.....	.....	.....	.....	.....	.....	.....	10
Franklin	.....	.....	16¼	.....	17.00	16.00	16.00	.....	16¾	.....	.....	.....	159
Hancock G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harshaw	.....	.....	1.50	.....	.....	.....	1.75	.....	.....	.....	13	.....	250
Homestake	.....	.....	18.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
Horn-Silver	.....	.....	.....	.....	.....	.....	8.15	.....	.....	.....	.....	.....	50
Huron	.....	.....	3¾	.....	.....	.....	.....	.....	3¾	.....	.....	.....	200
Indian Q'n	1⅝	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Little Pittsb	.....	.....	1.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Madison	.....	.....	.25	.....	.25	.....	.25	.....	.25	.....	.....	.....	2,500
Mammoth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.06	.....	100
Mass.& N.M.	.....	.....	.25	.24	.25	.24	.25	.....	.25	.....	.2	.....	3,100
Milton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
National	2⅛	.....	2 1-16	2.00	2.00	.....	.....	.....	2.00	.....	21	.....	650
North. Belle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola	.....	.....	35½	.....	.....	.....	.....	.....	32½	.....	36	.....	130
Penn-Breck	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pewabic	13¾	13½	*	.....	.....	.....	13.00	12¾	12½	.....	.....	.....	700
Pine Tree	.25	.....	.....	.....	.25	.....	.....	.....	.....	.....	.3	.28	1,000
Plymouth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	67¼	67	67¼	.....	67½	.....	67½	.....	67½	.....	67½	.....	205
Ridge	.....	.....	.....	.....	.....	.....	.....	.....	.2	.....	.....	.....	500
Robinson	.....	.....	.....	.....	.....	.....	.....	.....	1.61	.....	.....	.....	100
San Pedro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nev	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Islet	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
So. Pacific	.14	.....	.15	.....	.14	.....	.15	.....	.14	.....	.1	.14	4,300
Standard	5.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Star Copper	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
State Line	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nos.2 & 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stewart	.....	.....	.17	.....	.....	.....	.16	.....	.17	.....	.....	.....	1,200
Sullivan	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sutro Tun	.29	.....	.....	.....	.....	.....	.30	.....	3.00	.....	3.00	.....	200
Sycamore	.38	.....	.40	.....	.....	.....	.40	.....	.....	.....	.....	.....	1,000
Twin Lead	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	700
Vizina	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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PHILADELPHIA MINING STOCKS.

	Oct. 6.		Oct. 7.		Oct. 9.		Oct. 10.		Oct. 11.		Oct. 12.		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
American	.21	.....	.21	.....	.20	.19	.20	.....	.20	.....	.20	.18	17,100
Argent	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arizona So.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aztec	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Battle Mt	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Black Sul	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buena	.....	.....	.07	.....	.....	.....	.06	.....	.06	.05	.05	.04	15,400
California	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calista	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cincinnati	.....	.....	.....	.....	.....	.....	.10	.....	.....	.....	.....	.....	300
Comprom'e	.27½	.....	.30	.27½	.27½	.....	.....	.....	.25	.....	.30	.25	8,800
Cons. Va	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dauntless	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del Monte	.10	.....	.....	.....	.....	.....	.11	.....	.....	.....	.....	.....	600
Denver City	.25	.....	.25	.....	.23	.....	.....	.....	.20	.....	.22	.....	4,600
Fairview	.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Eureka	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Girard	.21	.....	.21	.....	.22	.21	.23	.22	.23	.....	.23	.....	8,500
Golconda	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Golden Age	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Governor	.....	.....	.11	.10	.....	.....	.10	.....	.....	.....	.....	.....	6,100
Grand Uni'n	.08	.....	.08	.....	.08	.....	.....	.....	.08	.....	.07	.....	10,300
Gunnison	.....	.....	.82½	.80	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Hancock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Intervener	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iowa Gulch	.16	.15	.15	.14	.14	.....	.14	.....	.13	.....	.12	.11	29,700
King Bul'on	.....	.....	.02	.....	.01	.....	.....	.....	.....	.....	.....	.....	5,000
Ledger Con	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Dia'd	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Maud	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
L'g & D'y Hl	.....	.....	.....	.....	.01	.....	.....	.....	.....	.....	.....	.....	1,000
McCullough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Magnolia	.....	.....	.02	.....	.....	.....	.01	.....	.....	.....	.01	.....	12,000
Montana	.....	.....	.....	.....	.....	.....	.07	.06	.....	.....	.....	.....	700
Mt. Lincoln	.....	.....	.....	.....	.....	.....	.02	.....	.....	.....	.....	.....	3,500
Mt.Sheridan	.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,200
National	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orion	.....	.....	.....	.....	.....	.....	.50	.15	.....	.....	.....	.....	750
Palmetto E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pembina	.80	.....	.85	.....	.8	.75	.80	.....	.80	.....	.80	.....	4,100
Penn-Breck	.30	.....	.30	.....	.3	.....	.27½	.....	.30	.25	.25	.....	9,100
Permanent	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pizarro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pizarro Ex	.....	.....	.....	.....	.....	.....	.02	.....	.....	.....	.....	.....	2,500
Potosi	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rara Avis	1.10	.....	.....	.....	1.17½	1.15	1.10	.....	.....	.....	.....	.....	800
Rara Avis E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rico Pion'r	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Pedro	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02	.....	.....	4,500
Silver Cord	.57½	.....	.60	.57½	.55	.....	.55	.....	.....	.....	.....	.....	3,400
Silv'r Plume	.03	.02	.03	.....	.04	.03	.....	.....	.06	.....	.....	.....	28,500
Silver Rock	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sultana	.06	.....	.06	.05	.06	.....	.06	.....	.....	.....	.05	.03	24,100
Sutro Tun'l	.30	.....	.32½	.....	.30	.....	.30	.....	.30	.....	.....	.....	2,000
Tombst'ne	1.00	.97½	.97½	.95	.92½	.....	.92½	.90	.90	.85	.90	.....	12,900
Tranquilli'y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tyrone	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Con	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Victor	.....	.....	.....	.....	.....	.....	.....	.....	.01	.....	.....	.....	1,000
Yale Mt	.40	.....	.40	.35	.47½	.40	.45	.....	.47½	.45	.55	.47½	10,600

Copper and Silver Stocks.

Reported by C. H. Smith, 15 Congress street, Boston, Stock Broker and Member of the Boston Mining and Stock Exchanges.

BOSTON, Oct. 12.

The market for mining stocks continues to rule dull and inactive, and prices are generally lower. The Lake Superior copper stocks, with one or two exceptions, are quite firm, although transactions are very limited, the orders confined to small lots and mostly to the dividend-paying mines. Calumet & Hecla declined from $254½@$252, on sales of about forty shares. Franklin was in rather better demand, and advanced from $15¼ (September 30th) @$16¼, closing at $16. Pewabic has ruled heavy, with more orders to sell than the market would take, resulting in a decline from $13½@$11¾, on sales of 550 shares. Quincy has been in fair investment demand, and the sales have been mostly in odd lots of stock, as they could be picked up, at $67¼@$67½; today $68 was bid without calling out any stocks. Osceola advanced from $35@$36, with sales of about 125 shares. Atlantic declined from $16½@$16. Allouez advanced from $2⅛@$2⅞. National sold at $2; Blue Hill at 75c. Ridge has been assessed 50c. per share, and sales are reported at 25c., assessment unpaid; to $1, assessment paid. Copper Falls, after a six months' sleep, put in an appearance this week; the last sale was on March 30th at $3½. Sales were made on Tuesday at $1½, since when it has advanced, gradually touching $2½ to-day.

In silver mining stocks, the business has been very light. Bonanza sold at $3½@$3⅝, ex dividend. Catalpa, very steady at $1.25@$1.27½, and Crescent at 47½@50c. Harshaw declined to $1½. The above comprise all the stocks dealt in at the regular Board.

At the Mining Exchange, there has been but little activity, and business confined to a few specialties. Empire declined from 50@43c. Massachusetts & New Mexico, steady at 24@25c. Sycamore Spring Water Company sold at 40c.; Catalpa, $1.22½@$1.25; Crescent, 67½c.; Pine Tree, 25@30c.

3 P.M.—At the afternoon Board, Calumet & Hecla sold at $252; Franklin, at $16; Huron, at 3⅛@3¼. Closing prices: Allouez, $2¼ bid, $2⅞ asked; Atlantic, $16@$16¼; Bonanza, $3½@$3⅝; Catalpa, $1.25@$1.30; Crescent, 47½@52½c.; Copper Falls, $2½; Franklin, $16; Harshaw, $1½@$1¾; Huron, $3½@$3⅝; Osceola, $36; Pewabic, $12; Quincy, $68½@$70; Silver Islet, $14; Sullivan $2¼@$3.

UNLISTED STOCKS.

Messrs. Watson & Gibson quote Lake Valley stocks as follows:

Sierra Apache.....80@90c. nominally.
Sierra Bella.....50@60c. nominally.
Sierra Grande.....$4.50 bid.

Absolutely nothing is doing in these stocks. A meeting of the Sierra Grande Company is to be held on the 15th inst.

METALS.

NEW YORK, Friday Evening, Oct. 13.

Copper.—Business stagnates, owing to the fact that buyers are all well supplied. There seems to be a growing feeling favorable to a speculative movement, but as yet nothing has transpired to base any estimate of its strength or the direction which it may take. Lake is nominally 18⅛@18¼c., though buyers are not inclined to bid more than 18c. Baltimore is nominally 17½@17⅝c., and other kinds may be quoted within that range. London has maintained its rise, the latest cable to-day being £71 for Chili Bars. If they were so disposed, the Lake companies could probably command a good price for export.

Tin.—Owing chiefly to the fact that some weak speculators have been forced to place their metals on the market, tin has declined under a moderate business. We quote Spot Straits, 24½@24¾c.; Australian, 24⅝c.; Lamb & Flag, 24c.; and English Refined, 24¼c. London cables £106 10s.

Lead.—For jobbing lots of spot metal, from 5·10@5·15c. is paid by those who are forced to enter the market, which buyers do only under pressure. In the aggregate, about 300 or 400 tons of jobbing lots have been taken at that range, which does not, however, by any means furnish any guide to what lead would bring in a wholesale way. Western refined lead for immediate shipment is freely offered at 5·10c., without finding takers. From this, it is safe to assume, that common lead, if found in the market, would probably not fetch more than 5·05c. The returns of the third quarter of shipments of bullion and ore from Leadville indicate a rate of production from that and tributary smelting camps of about 50,000 tons this year.

Messrs. John Wahl & Co., of St. Louis, wire us to-day as follows:

There is but little doing, and the demand is from hand to mouth only. There have been sales of Soft Missouri at 4·75c., and of Hard at 4·70c. The receipts were 800 tons this week, against 850 tons last week.

Spelter.—This metal is dull and lifeless. The arrivals of foreign spelter continue heavy. Common Domestic is 5·30@5·35c., while Foreign is nominally held at 5⅝c. London cables £17 2s. 6d.—*Sheet-Zinc.* The contest of leading Western producers has again led to a reduction, this time to 6·25c.

Antimony.—There is nothing of special note. Cookson's is selling at 13@13½c.; Hallett's at 11@11½c.; and Nevada at 12½c.

Quicksilver.—The spot price is 37½@37½c. London price, £6 per bottle.

BULLION MARKET.

NEW YORK, Friday Evening, Oct. 13.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
Oct. 7	51⅝	112⅝	Oct. 11	*	112⅝
Oct. 9	51⅝	112⅝	Oct. 12	*	112⅝
Oct. 10	51⅝	112⅝	Oct. 13	*	112¾

*51 11-16.

The market abroad and here has been quiet at nearly the same figures for the past week, and closes without any special indications.

Bullion Receipts at New York.—The bullion received from the mines at the various offices in this city during the week ended October 13th, as compiled from various sources, amounted to $347,000, as against $151,000 reported for the previous week. The receipts from January 1st, 1882, to date, are $11,099,059.51.

Exports and Imports of Gold and Silver at New York.

Exports.

Week ended October 7th	$58,000
Corresponding week last year	170,246
Since January 1st, 1882	44,301,845
Corresponding period last year	8,787,376

Imports.

Week ended October 7th	$261,517
Corresponding week last year	877,351
Since January 1st, 1882	8,368,995
Corresponding period last year	46,778,054

Foreign Bank Statements.—The governors of the Bank of England at their weekly meeting made no change in the bank's minimum rate for discount, and it remains at 5 per cent. During the week, the bank lost £292,000 bullion, and the proportion of its reserve to its liabilities was reduced from 35 3-16 to 32½ per cent against 32 per cent at this date last year. The bank, October 11th, gained £10,000 bullion on balance. The weekly statement of the Bank of France also shows a heavy loss of specie; 9,350,000 francs gold, and 6,050,000 francs silver.

BULLION PRODUCTION FOR 1882.

We give below a statement showing the latest bullion shipments. These are officially obtained from the companies, where that is possible; and where official statements can not be procured, we take the latest shipments published in those papers nearest to the mines reported. The table gives the amount shipped for the week up to the date given, as well as the aggregate shipments to such date from the first of January, 1882.

The shipments of silver bullion are valued at $1.29·29 per ounce troy; gold at the standard $20.67 per ounce troy. The actual value of the silver in the following table is therefore subject to a discount, depending on the market price of silver. If the price of silver be counted at $1.12 per ounce, which has for some months been about its average value, the following figures, where they relate to silver

bullion, should be diminished by about 13½ per cent to arrive at actual value.

MINES.	States.	For the week.	Month of September.	Year from Jan. 1st, 1882.
*Alice, c. s.	Mont.			$570,199
*Alta-Montana, c.	"			269,534
Barbee & Walker, s.	Utah.	$3,116	$4,163	67,142
Betty O'Neal, s.	Nev.		10,566	59,220
*Black Bear, c.	Cal.			54,938
Bodie, c. s.	"	9,470	31,731	306,904
*Boston & Montana, c.	Mont.			180,249
*Caledonia, c.	Dak.			62,235
*Caribou, s.	Colo.		19,467	126,918
*Central Arizona, s.	Ariz.			125,532
*Christy, s.	Utah.			214,600
*Chrysolite, s. l.	Colo.		8,415	278,908
Cons. Bobtail, c.	"			83,477
*Contention, s.	Ariz.		152,174	152,174
Crismon-Mammoth, c.	Utah.			63,579
*Custer, c. s.	Idaho.		43,243	619,258
*Deadwood-Terra, c.	Dak.		54,461	491,481
*Derbec Blue Grav., c.	Cal.			107,026
*Eureka Con., c. s. l.	Nev.		44,663	632,857
Evening Star, s. l.	Colo.			642,520
Father de Smet, c.	Dak.			262,227
*Frisco M. & S.Co., s. l.	Utah.		21,056	271,473
Girard, s.	Ariz.			90,964
Grand Central, s.	"		100,000	905,000
*Hall-Anderson, c.	N. S.		4,306	7,301
Head Center, s.	Ariz.	6,120	25,000	97,067
*Homestake, c.	Dak.		91,099	882,651
Horn-Silver, s. l.	Utah.	65,000	217,529	2,644,790
*Hope, s.	Mont.		48,220	240,145
Idaho, c.	Cal.			395,540
*Indian Queen, s.	Nev.			138,697
Inyo Cons., c.	Cal.		12,000	46,421
Ingersoll, s.	Ariz.			90,000
Iron Silver, s.	Colo.		120,000	865,436
*Jocuistita, s.	Mex.			600,419
*‡Leeds, s.	Utah.			11,988
*Little Pittsburg, s. l.	Colo.		6,460	118,543
Manhattan, s.	Nev.			64,300
Morning Star, s. l.	Colo.			333,136
Mount Diablo, s.	Nev.			179,445
*Navajo, c. s.	"		70,000	136,288
New York Hill, c.	Cal.			56,256
Noonday, c.	"			57,690
North Noonday, c.	"			56,545
Northern Belle, s.	Nev.	18,773	24,699	584,708
*‡Ontario, s. l.	Utah.		173,040	1,955,048
Ophir, c. s.	Nev.			39,472
*Oxford, c.	N. S.		9,360	13,420
Pascoe, s.	Utah.			4,575
*Pleasant Valley, c. s.	Cal.			8,267
Robert E. Lee, s.	Colo.			292,550
Savage, s.	Nev.			3,500
*Silver Bow, c. s.	Mont.			186,875
Silver King, s.	Ariz.		9,420	258,632
*Spring Valley, c.	Cal.			152 000
Standard, c.	"	37,100	79,898	828,061
Star, s.	Nev.		3,174	39,896
Stormont, s.	Utah.	3,030	26,285	231,474
Syndicate, c.	Cal.			19,426
Tintic M. & M. Co.	Utah.			26,534
*Tip Top, s.	Ariz.			191,034
*Tombstone, c. s.	"			590,286
Union Con., s.	Nev.			217,623
Vizina, s.	Ariz.			143,200
Total amount of shipments to date				$18,827,658

* Official. † Net. ‡ Assay value. *G. Gold. S. Silver. L. Lead.*

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Oct. 13.

American Pig.—Nothing has occurred to change the situation; the makers of favorite brands are still well sold ahead, and find that consumers are eager for prompt shipment. Standard brands nominally command $25.50@$26.50 for No. 1, while No. 2 ranges unchanged from $23.50@$24.50. Gray Forge is still $20.50@$21.50. In Bessemer pig, we note the sale of 600 tons of foreign at $24.50. Buyers purchase only when absolute necessity forces them, while sellers firmly hold on to prices. In English shipping ports, Bessemer pig is quoted £5 6s. 6d. by cable. Spiegeleisen is quiet at $28@$28.50, for 10 to 12 per cent.

Scotch Pig.—Beyond the usual sales of small lots, nothing has transpired, and the market is quiet but strong. The arrivals have been 2000 tons, most of which is to be delivered on previous sales. Spot lots are firmly held, but future delivery is somewhat freely offered. Freights for November shipment are 11s.; and for December, 11s. 6d. For spot we quote: Eglinton, $23@$23.50; Glengarnock, $25@$25.50; and Gartsherrie, $25@$25.50. Cables to the Iron and Metal Exchange to-day make Warrants in Glasgow, 51s. 1½d.; Carnbroe, 58s. 6d.; Langloan, 67s. 6d.; Gartsherrie, 65s. 6d., all at Glasgow; and Glengarnock, 58s. 6d.; and Eglinton, 53s. 6d., at Ardrossan.

Rails.—The mills are all well supplied with orders for the near future, and the demand is well taken care of for some time. We hear of sales aggregating 16,000 to 17,000 tons at $45@$46 at mill, partly for mid-summer delivery. We quote ordinary sections, winter and spring delivery, $45@$46 for medium-sized lots, according to section, at mill. England cables £5 7s. 6d. at shipping ports for rails, and £5 for blooms.

Old Rails.—Business is very light, and the market remains quiet at $26.50@$27 for Tees nominally. There are no D. Hs. in the market.

Scrap.—Nothing has been done. We quote nominally $28 ex ship.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Oct. 13.

Anthracite.

There have been no features during the week worthy of special attention. The trade is quiet, and there is very little buying at the present moment. We can not hear that October prices are realized to any extent, and September figures still prevail. Next week is looked forward to with interest, as it is believed that it will bring the beginning of the usual movement at the approach of the end of the month. This may bring manufacturers into the market, but it is not likely that the retailers will buy to any extent. They are all well stocked up for a month or two, and are more anxious now to supply their own customers. There is a little more doing in the delivery of coal from yards to consumers, and prices are slightly better.

Freights are a little easier, being $1.10 to Boston, and 80@90c. for barges and vessels respectively to Providence.

The Philadelphia & Reading Coal and Iron Company announces in Philadelphia to-day an advance of 10 cents a ton in tolls for Eastern shipment, to go into effect on Monday.

Bituminous.

There is not now as much pressure for coal for immediate delivery as there has been, but although the arrivals of both Cumberland and Clearfield coal are now larger, they scarcely suffice for the demand, moderate as it is. Prices consequently remain firm. The steamer trade is dull. Freights from Baltimore and Georgetown on Cumberland coal are still high. We quote alongside: Cumberland $4.70@$4.75, and Clearfield $4.55@$4.60. Higher prices are realized for small lots under special circumstances.

STATISTICS OF COAL PRODUCTION.

Comparative statement of the production of anthracite coal for the week ended October 7th, and years from January 1st:

TONS OF 2240 LBS.	1882. Week.	1882. Year.	1881. Week.	1881. Year.
Wyoming Region.				
D. & H. Canal Co.	74,846	2,638,296	72,468	2,712,232
D. L. & W. RR. Co.	106,161	3,419,266	94,208	3,213,074
Penna. Coal Co.	38,971	1,062,080	30,907	1,041,882
L. V. RR. Co.	15,886	815,853	24,632	860,982
P. & N. Y. RR. Co.	3,647	147,057	2,658	74,283
C. RR. of N. J.	36,730	1,737,506	48,549	1,764,010
Penna. Canal Co.	12,722	376,763	14,836	341,482
	288,963	10,196,821	288,258	10,007,945
Lehigh Region.				
L. V. RR. Co.	111,374	3,605,314	116,990	3,357,681
C. RR. of N. J.	41,912	1,676,042	47,939	1,629,358
S. H. & W. B. RR.		37,667		9,386
	153,286	5,319,023	164,929	4,996,425
Schuylkill Region.				
P. & R. RR. Co.	154,054	,124 105	161,912	5,211,554
Shamokin & Lykens Val.	28,796	963,769	24,797	799,793
	182,850	6,097,874	186,709	6,011,347
Sullivan Region.				
St Line & Sul. RR. Co.	1,832	45,063	1,358	47,890
Total	626,931	21,658,781	641,254	21,063,607
Increase		595.174		
Decrease	14,323			

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Total same time in 1877	14,805,495	tons.
" " " " 1878	12,640,690	"
" " " " 1879	19,808,063	"
" " " " 1880	17,074,484	"

The decrease in shipments of Cumberland Coal over the Cumberland Branch and Cumberland & Pennsylvania railroads amounts to 821,519 tons, as compared with the corresponding period in 1881.

Belvidere-Delaware Railroad Report for the week ended September 30th:

	Week.	Year. 1882.	Year. 1881.
Coal for shipment at Coal Port (Trenton)	619	67,727	51,768
Coal for shipment at South Amboy	15,526	550,330	496,384
Coal for distribution	9,876	529,746	516,727
Coal for company's use	2,493	95,322	82,633
Total	28,514	1,243,134	1,147,512
Increase		95,622	
Decrease			

The Production of Bituminous Coal for the week ended September 30th was as follows:

Tons of 2000 lbs., unless otherwise designated.	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lbs.	44,455	865,050
Barclay Region, Pa.		
Barclay RR., tons of 2240 lbs.	5,144	296,848
Broad Top Region, Pa.		
Huntingdon & Broad Top RR	6,842	211,252
East Broad Top	2,312	67,080
Clearfield Region, Pa.		
Snow Shoe	5,483	166,997
Tyrone and Clearfield	42,549	2,086,542
Alleghany Region, Pa.		
Pennsylvania RR.	10,868	404,464
Pittsburg Region Pa.		
West Penn RR.	6,971	253,952
Southwest Penn. RR.	12,773	76,337
Penn & Westmoreland gas-coal, Pa. RR.	19,828	940,058
Pennsylvania RR.	12,095	486,685
Total	169,320	5,855,245

The Transportation of Coke over the Pennsylvania Railroad for the week ended September 30th, and year from Jan. 1st:

Tons of 2000 lbs.	Week.	Year.
Penn. RR. (Alleghany Region)	2,145	83,397
West Penn. RR.	2,681	87,084
Southwest Penn. RR	37,766	1,321,647
Penn. & Westmoreland Region, Pa. RR	5,494	189,726
Pittsburg, Penn. RR	7,333	429,340
Show Shoe (Clearfield Region)	321	15,978
Total	55,740	2,127,172

Wholesale Prices of Anthracite Coal Delivery, f. o. b., at Tide-Water Shipping Ports per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
* Pittston at Newburg	4 05	4 10	4 10	4 30	4 55	4 55
Scranton at Hoboken	4 30	4 30	4 30	4 55	4 85	4 85
Lackawanna at Weehawk'n	4 15	4 15	4 30	4 55	4 85	4 90
Wilkes-Barre at P. Johnston	4 30	4 30	4 30	4 55	4 85	4 75
Plymouth R. A. at P. John.			4 40	4 75	5 20	4 85
LEHIGH COAL.						
Honey Brook at Port John.	5 25		4 50	4 55	4 85	4 75
Fulton at South Amboy	5 25			4 60	4 85	4 75
U. L. & Coun. Ri'ge at Eliz'pt						
SCHUYLKILL COAL. *At Elizabethport.*						
Hard White Ash	5 15	5 15	4 50	4 70	4 90	4 70
Free-Burning White Ash		4 30	4 30	4 55	4 90	4 70
Schuylkill Red Ash				4 55	5 00	4 70
Shamokin				4 70	5 00	4 70
Lorberry				4 85	5 25	4 85
Lykens Valley (Brookside)			5 35	5 65	5 85	5 20
At Port Richmond, Philadelphia, for shipment to points beyond Capes of the Delaware.						
Hard White Ash	4 75	4 75	4 15	4 35	4 55	4 35
Free-Burning White Ash		3 95	3 95	4 20	4 55	4 35
Schuylkill Red Ash				4 20	4 65	4 35
Shamokin				4 35	4 65	4 35
Lorberry				4 35	4 75	4 35
Lykens Valley (Brookside)				5 25	5 35	4 70

* Fifty cents additional for delivery at New York.

Wholesale Prices of Bituminous Coals.

Clearfield, at Philadelphia	$3.35@$3.45
" " South Amboy	4.35@ 4.50
" " New York, alongside	4.55@ 4.60
Cumberland, at New York	4.65@ 4.70
" " South Amboy	4.45@ 4.50
" " Baltimore	3.45@ 3.50
" " Georgetown	3.25@ 3.35
Block House	1.75 f. o. b.
International	1.75 f. o. b.
Freights to Cuba	@ 1.50

Horsford's Acid Phosphate,

For Nervousness, Indigestion, etc.

Send to the Rumford Chemical Works, Providence, R. I., for pamphlet. Mailed free.

NEW YORK, Oct. 12, 1882.

THE CONTENTION CONSOLIDATED MINING COMPANY this day declared its regular monthly dividend, No. 9, of twenty-five cents per share, payable October 28th, 1882, at the office of the Farmers' Loan and Trust Company, No. 26 Exchange Place, on all stock registered in New York. Transfer-books close on October 18th.

W. HART SMITH, Vice-President.

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